

**BOSCH INJ. PUMP TEST SPECIFICATIONS****Note remarks**

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 23.04.93  
Test oil : ISO 4113

Combination No. : 0400866198

Injection pump  
Pump designation : PES6A100D320/3RS2763  
EP type number : 0410806006

Governor  
Governor design. : RSV400...950AOC2238  
: -4R  
Governor no. : 0420233331

Cust. part No. :

**Customer-spec. information**

Customer : CDC  
Motor : 6 CT 8.3  
Power KW : 145.0

**TEST BENCH REQUIREMENTS**

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + - 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

**REMARKS**

Start-of-delivery mark at 10° cam rotation angle after start of delivery, cylinder 1

**(A) INJECTION PUMP SETTING VALUES**  
Set equal delivery quant.  
per values \_\_\_\_\_**BEGINNING OF DELIVERY**

Prestroke mm : 2.85  
Tolerance mm : + - 0.05

test only : + - 0.10

Rack travel in mm : 10.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + - 0.50  
Check tolerance °NW : + - 0.75

**BEGINNING OF DELIVERY DIFFERENCE**

Time to cyl. no. : 1

**BASIC SETTING**

Rated speed rpm : 950

Rack travel in mm : 12.15  
Tolerance mm : + - 0.05

Del. quantity  
cm3/1000 strokes : 121.5

Tolerance  
cm3/1000 strokes : + - 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 3.5  
 Spred Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 6.5  
 2nd speed rpm : 400  
 Rack travel in mm : 5.10  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 15.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
 Spred Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.50  
 Tolerance mm : + 0.20  
 governor spring pre-tension click setting x : 2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
 Aneroid pressure hPa : 900  
 Del. quantity cm<sup>3</sup>/1000 strokes : 121.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.5  
 Spred

Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 6.5

##### RATED SPEED

control lever position degree : 93.0  
 tolerance degree : + 4.0  
 rack travel mm : 11.10  
 Rated speed rpm : 995  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1070  
 Tolerance 1/min : + 5  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1150  
 rack travel mm : 4.00  
 Rated speed rpm : 1085

##### LOW IDLE

##### Setting point w/out bumper spring

Rated speed rpm : 400  
 rack travél mm : 4.60

##### Testing:

Rated speed rpm : 400  
 rack travel mm : 5.10  
 Tolerance mm : + 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 470  
 Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : 900

rack travel mm : 12.15  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 305  
rack travel mm : 11.80  
Tolerance mm : + - 0.20

Pressure hPa : 220  
rack travel mm : 11.15  
Tolerance mm : + - 0.05

Rated speed rpm : 400  
rack travel mm : 5.10  
Tolerance mm : + - 0.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.5  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance cm<sup>3</sup>/1000S. : 8.0

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 91.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.5

---

#### BREAKAWAY

Rack travel in mm : 11.10  
Rated speed rpm : 995  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + - 0.75  
Del. quantity cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 13.0

---

#### LOW IDLE

A03

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.04.93  
Test oil : ISO 4113

Combination No. : 0403476123

Injection pump  
Pump designation : PES6MW100/320RS1227Z  
EP type number : 0413406217

Governor  
Governor design. : RSV325...1300MWA350  
Governor no. : 0420085200

Cust. part No. : 1249935

## Customer-spec. information

Customer : DAF  
Motor : NS133L  
Power KW : 133.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 13.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.75  
Tolerance mm : + 0.05

Det. quantity  
cm<sup>3</sup>/1000 strokes : 92.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm <sup>3</sup> /1000S.	: + 3.0
Spred Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.65
Tolerance mm	: + 0.35
governor spring pre-tension	
click setting x	: 4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Aneroid pressure hPa	: 1000
Del. quantity cm <sup>3</sup> /1000 strokes	: 92.5
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 3.0
Spred Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 6.0

##### RATED SPEED

control lever position degree	: 102.0
tolerance degree	: + 4.0
rack travel mm	: 10.70
Rated speed rpm	: 1335
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1425
Tolerance 1/min	: + 15
rack travel mm	: 1.00
Tolerance mm	: + 0.70
Rated speed rpm	: 1550
rack travel mm	: 4.00
Rated speed rpm	: 1455

##### LOW IDLE

control lever position degree	: 70.0
tolerance degree	: + 4.0
Setting point w/out bumper spring	
Rated speed rpm	: 325
rack travel mm	: 4.50
Testing:	
Rated speed rpm	: 325
rack travel mm	: 4.00
Tolerance mm	: + 0.10
rack travel mm	: 2.00
Rated speed rpm	: 485
Tolerance 1/min	: + 35

##### TORQUE CONTROL

Rated speed rpm	: 1000
rack travel mm	: 11.75
Tolerance mm	: + 0.05
Rated speed rpm	: 1300
rack travel mm	: 11.70
Tolerance mm	: + 0.10

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm	: 600
Pressure hPa	: 1000
rack travel mm	: 11.75
Tolerance mm	: + 0.05

##### MEASUREMENT

Pressure hPa	: 290
--------------	-------

Rated speed rpm : 600  
rack travel mm : 11.25  
Tolerance mm : + - 0.05

Rated speed rpm : 600

Pressure hPa : -  
rack travel mm : 9.90  
Tolerance mm : + - 0.10

Pressure hPa : 160  
rack travel mm : 10.40  
Tolerance mm : + - 0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1000

Rated speed rpm : 1300

Del. quantity

cm<sup>3</sup>/1000 strokes : 91.0

Tolerance

cm<sup>3</sup>/1000 strokes : + - 1.5

Check tolerance

cm<sup>3</sup>/1000S. : + - 4.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance

cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure

hPa : -

Rated speed rpm : 600

Del. quantity

cm<sup>3</sup>/1000 strokes : 63.0

Tolerance

cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance

cm<sup>3</sup>/1000S. : + - 3.0

---

#### BREAKAWAY

Rack travel in mm : 10.70

Rated speed rpm : 1335

Tolerance 1/min : + - 5

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.06.93  
Test oil : ISO 4113

Combination No. : 0402846055

Injection pump  
Pump designation : PE6P110A320RS8009-1  
EP type number : 0412816011

Governor  
Governor design. : RQV300...1200PA1043  
Governor no. : 0421814024

Cust. part No. : 11030652-P03

## Customer-spec. information

Customer : VME  
Motor : TD73KCE  
Power KW : 186.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413078

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.85  
Tolerance mm : + 0.05

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.85  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 198.0

Tolerance  
cm³/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spred Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 4.40  
 Tolerance mm : + 0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 24.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 5.0  
 Spred Tolerance cm<sup>3</sup>/1000 strokes : 7.0  
 Check tolerance cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1260  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure hPa : 1300  
 Del. quantity cm<sup>3</sup>/1000 strokes : 198.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spred Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### RATED SPEED

control lever position degree : 50.0  
 tolerance degree : + 4.0  
 control lever position degree : 116.0  
 tolerance degree : + 4.0  
 rack travel mm : 10.85  
 Rated speed rpm : 1245  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1345  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1450

#### LOW IDLE

control lever position degree : 81.0  
 tolerance degree : + 4.0

control lever position degree : 16.0  
 tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
 rack travel mm : 4.40  
 Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 6.50

Rated speed rpm : 335

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1300  
 rack travel mm : 11.85

Tolerance mm : + - 0.05

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 7.50  
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 920  
rack travel mm : 3.80  
Tolerance mm : + - 0.20

Pressure hPa : 240  
rack travel mm : 0.25  
Tolerance mm : + - 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

#### BREAKAWAY

Rack travel in mm : 10.85  
Rated speed rpm : 1245  
Tolerance 1/min : + - 5

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 4.40  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.07.93  
Test oil : ISO 4113

Combination No. : 0400866190

Injection pump  
Pump designation : PES6A100D320/3RS2691  
EP type number :

Governor  
Governor design. : RSV400...1250A0C2216  
: -5R  
Governor no. : 0420233327

Cust. part No. :

### Customer-spec. information

Customer : CDC  
Motor : 6 CT 8.3  
Power KW : 160.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901017

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Prestroke mm : 2.85  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1  
S.o.d. blocking  
Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 3.5

Spred Tolerance cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance cm<sup>3</sup>/1000S. : 6.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure hPa : -  
Del. quantity cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 3.5  
Spred Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance cm<sup>3</sup>/1000S. : 6.5

##### RATED SPEED

control lever position degree : 106.0  
tolerance degree : + 4.0

rack travel mm : 11.00  
Rated speed rpm : 1295  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1370  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1450

rack travel mm : 4.00  
Rated speed rpm : 1375

##### LOW IDLE

control lever position degree : 80.0  
tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.00

##### Testing:

Rated speed rpm : 400  
rack travel mm : 5.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Tolerance 1/min : + 30

Rated speed rpm : 100  
CRT mm min. : > 19.50

##### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 12.05  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 12.60  
Tolerance mm : + 0.10

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 124.5  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0

---

## BREAKAWAY

Rack travel in mm : 11.00  
Rated speed rpm : 1295  
Tolerance 1/min : + - 5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 13.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.06.93  
Test oil : ISO 4113

Combination No. : 0400866208

Injection pump  
Pump designation : PES6A100D320/3RS2691  
EP type number : \_\_\_\_\_

Governor  
Governor design. : RSV400...1100A0C2190  
: -80R  
Governor no. : 0420233319

Cust. part No. :

## Customer-spec. information

Customer : CDC  
Motor : 6 CT 8.3  
Power KW : 156.6

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901017

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 2.85  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance Check : + 0.50  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1  
S.o.d. blocking  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.35  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 123.5

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.50  
 Tolerance mm : + 0.20

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 123.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.5

##### RATED SPEED

control lever  
 position degree : 90.0  
 tolerance degree : + 4.0  
 rack travel mm : 11.30  
 Rated speed rpm : 1145  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00

A14

+-----+  
 +-----+  
 +-----+  
 +-----+  
 +-----+

Rated speed rpm : 1200  
 Tolerance 1/min : + 15  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1300  
 rack travel mm : 4.00  
 Rated speed rpm : 1210

##### LOW IDLE

+-----+  
 +-----+  
 +-----+  
 +-----+  
 +-----+

control lever  
 position degree : 70.0  
 tolerance degree : + 4.0  
 Setting point w/out bumper spring

+-----+  
 +-----+  
 +-----+  
 +-----+

Rated speed rpm : 400  
 rack travel mm : 4.90

##### Testing:

+-----+  
 +-----+  
 +-----+  
 +-----+

Rated speed rpm : 400  
 rack travel mm : 5.40  
 Tolerance mm : + 0.10

+-----+  
 +-----+  
 +-----+

rack travel mm : 2.00  
 Tolerance 1/min : + 30

+-----+  
 +-----+  
 +-----+

Rated speed rpm : 100  
 CRT mm min. : > 19.50

##### TORQUE CONTROL

+-----+  
 +-----+  
 +-----+  
 +-----+

Rated speed rpm : 1100  
 rack travel mm : 12.35  
 Tolerance mm : + 0.05

##### BREAKAWAY

+-----+  
 +-----+  
 +-----+  
 +-----+

Rack travel in mm : 11.30  
 Rated speed rpm : 1145  
 Tolerance 1/min : + 5

##### STARTING FUEL DELIVERY

+-----+  
 +-----+  
 +-----+

Rated speed rpm : 100  
 rack travel mm : 20.00

Tolerance mm : + - 1.00  
Det. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 13.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.05.93  
Test oil : ISO 4113

Combination No. : 0402746949

Injection pump  
Pump designation : PES6P120A720RS7224  
: -2  
EP type number : 0412726893

Governor  
Governor design. : RQV275...1100PA975  
: -3K  
Governor no. : 0421815350

Cust. part No. :

### Customer-spec. information

Customer : IVECO-FRANCE SA  
Motor : 8460.41.406

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 140  
Tolerance l/h : + 20.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.15  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 218.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 1.90  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 1145  
 guide sleeve  
 travel mm : 10.40  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 750  
 guide sleeve  
 travel mm : 6.10  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 430  
 guide sleeve  
 travel mm : 3.60  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1360  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1140  
 Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 218.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 119.0  
 tolerance degree : + - 4.0  
 rack travel mm : 11.70  
 Rated speed rpm : 1145  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1235  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1350

##### LOW IDLE

control lever  
 position degree : 69.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 275  
 rack travel mm : 5.20  
 Tolerance mm : + - 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 100  
 CRT mm min. : > 6.70  
 Rated speed rpm : 335

---

#### TORQUE CONTROL

Rated speed rpm	:	1100
rack travel mm	:	12.75
Tolerance mm	:	+ - 0.05
Rated speed rpm	:	900
rack travel mm	:	12.70
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	500
rack travel mm	:	11.60
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	700
rack travel mm	:	12.10
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	350
rack travel mm	:	11.20
Tolerance mm	:	+ - 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm	:	900
Pressure hPa	:	1200
rack travel mm	:	12.75
Tolerance mm	:	+ - 0.05

##### MEASUREMENT

Pressure hPa	:	-
Rated speed rpm	:	900
rack travel mm	:	7.50
Tolerance mm	:	+ - 0.10

Rated speed rpm	:	900
Pressure hPa	:	410

rack travel mm	:	8.80
Tolerance mm	:	+ - 0.20

Pressure hPa	:	750
rack travel mm	:	11.35
Tolerance mm	:	+ - 0.05

---

##### START CUT-OUT

Rated speed rpm	:	< 220
Check speed 1/min	:	< 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure	:	1200
hPa	:	900
Rated speed rpm	:	230.0
Del. quantity	:	
cm <sup>3</sup> /1000 strokes	:	

Tolerance	:	+ - 3.0
cm <sup>3</sup> /1000 strokes	:	
Check tolerance	:	+ - 6.0
cm <sup>3</sup> /1000S.	:	

Aneroid pressure	:	-
hPa	:	500
Rated speed rpm	:	243.0
Del. quantity	:	
cm <sup>3</sup> /1000 strokes	:	

---

#### BREAKAWAY

Rack travel in mm	:	11.70
Rated speed rpm	:	1145
Tolerance 1/min	:	+ - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity	:	
cm <sup>3</sup> /1000 strokes	:	140.0
Tolerance	:	
cm <sup>3</sup> /1000 strokes	:	+ - 15.0

Check tolerance : + - 19.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.06.93  
Test oil : ISO 4113

Combination No. : 0401840734

Injection pump  
Pump designation : PE12P110A920LS3173  
EP type number : 0411810708

Governor  
Governor design. : RQV300...1075PA746  
Governor no. : 0421813477

Cust. part No. :

### Customer-spec. information

Customer : KHD  
Motor : BF12L513  
Power KW : 333.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

### REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 2.85  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 4- 9- 8- 5- 2  
: - 11- 10- 3- 6  
: - 7- 12

Phasing : 0-15-60-75-120-135  
: -180-195-240-255

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 11.40  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 133.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 5.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 7.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1120  
 Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 133.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

##### RATED SPEED

control lever position degree	:	54.0
tolerance degree	:	+ - 4.0
rack travel mm	:	10.40
Rated speed rpm	:	1120
Tolerance 1/min	:	+ - 5
rack travel mm	:	4.00
Rated speed rpm	:	1230
Tolerance 1/min	:	+ - 15
rack travel mm	:	0.50
Tolerance mm	:	+ - 0.50
Rated speed rpm	:	1350

##### LOW IDLE

control lever position degree	:	19.0
tolerance degree	:	+ - 4.0

##### Testing:

Rated speed rpm	:	300
rack travel mm	:	6.70
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	100
CRT mm min.	:	> 8.10
Rated speed rpm	:	390

##### TORQUE CONTROL

Rated speed rpm	:	1075
rack travel mm	:	11.40
Tolerance mm	:	+ - 0.05

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm	:	450
Pressure hPa	:	900
rack travel mm	:	11.40
Tolerance mm	:	+ - 0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 450  
rack travel mm : 10.50  
Tolerance mm : + - 0.05

Rated speed rpm : 450

Pressure hPa : 410  
rack travel mm : 10.70  
Tolerance mm : + - 0.10

Pressure hPa : 460  
rack travel mm : 11.20  
Tolerance mm : + - 0.05

## START CUT-OUT

Rated speed rpm : > 220  
Check speed 1/min : < 240

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Rated speed rpm : 450  
Del. quantity cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 5.0

## BREAKAWAY

Rack travel in mm : 10.40  
Rated speed rpm : 1120  
Tolerance 1/min : + - 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 19.0

## LOW IDLE

Det. quantity cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 5.5  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance cm<sup>3</sup>/1000S. : 10.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.06.93  
Test oil : ISO 4113

Combination No. : 0401840754

Injection pump  
Pump designation : PE12P110A920LS3173  
EP type number : 0411810708

Governor  
Governor design. : RQV300...1150PA820  
Governor no. : 0421813561

Cust. part No. :

### Customer-spec. information

Customer : KHD  
Motor : BF12L513C  
Power KW : 386.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

### REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 2.85  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 4- 9- 8- 5- 2  
: - 11- 10- 3- 6  
: - 7- 12

Phasing : 0-15-60-75-120-135  
: -180-195-240-255  
: -300-315

Tolerance check  
tolerance °NW : + 0.30  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.50  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 157.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 5.5  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 7.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1190

Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 157.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

##### RATED SPEED

control lever	
position degree	: 55.0
tolerance degree	: + - 4.0
control lever	
position degree	: 121.0
tolerance degree	: + - 4.0
rack travel mm	: 11.50
Rated speed rpm	: 1195
Tolerance 1/min	: + - 5
rack travel mm	: 4.00
Rated speed rpm	: 1305
Tolerance 1/min	: + - 15
rack travel mm	: 0.50
Tolerance mm	: + - 0.50
Rated speed rpm	: 1400

##### LOW IDLE

control lever	
position degree	: 85.0
tolerance degree	: + - 4.0

control lever	
position degree	: 19.0
tolerance degree	: + - 4.0

##### Testing:

Rated speed rpm	: 300
rack travel mm	: 6.50
Tolerance mm	: + - 0.10
Rated speed rpm	: 100
CRT mm min.	: > 8.10
Rated speed rpm	: 375

##### TORQUE CONTROL

Rated speed rpm	: 1150
rack travel mm	: 12.50
Tolerance mm	: + - 0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 450  
Pressure hPa : 750  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.10

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 450  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 450  
Pressure hPa : 340  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 430  
rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.05

---

### START CUT-OUT

Rated speed rpm : < 220  
Check speed 1/min : < 240

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 450  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

### BREAKAWAY

Rack travel in mm : 11.50  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.07.93  
Test oil : ISO 4113

Combination No. : 0400846614

Injection pump  
Pump designation : PES6A95D410RS2844  
EP type number : 0410896893

Governor  
Governor design. : RQV300...1400AB1065  
: -31L  
Governor no. : 0420212246

Cust. part No. : 024 074 9702

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM 366  
Power KW : 97.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1680750015

Outside diameter : 6.0

x inside diameter : 1.5  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 3.25  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 8.75  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance cm<sup>3</sup>/1000S. : 6.0

2nd speed rpm : 300

Rack travel in mm : 5.00  
Tolerance mm : + - 0.10

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
Rated speed rpm : 1450

Rack travel in mm : 16.50  
Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
Aneroid pressure hPa : -  
Del. quantity cm<sup>3</sup>/1000 strokes : 74.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance cm<sup>3</sup>/1000S. : 6.0

##### RATED SPEED

control lever position degree : 110.0  
tolerance degree : + - 4.0

rack travel mm : 7.75  
Rated speed rpm : 1445  
Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 1555  
Tolerance 1/min : + - 15

rack travel mm : 0.50  
Tolerance mm : + - 0.50

Rated speed rpm : 1670

##### LOW IDLE

control lever position degree : 62.0  
tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 6.50

Rated speed rpm : 575

##### TORQUE CONTROL

Rated speed rpm : 500  
rack travel mm : 8.80  
Tolerance mm : + - 0.15

##### START CUT-OUT

Rated speed rpm : < 220  
Check speed 1/min : < 240

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Rated speed rpm : 400  
Del. quantity cm<sup>3</sup>/1000 strokes : 54.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

##### BREAKAWAY

Rack travel in mm : 7.75  
Rated speed rpm : 1445  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.08.93  
Test oil : ISO 4113

Combination No. : 0402076060

Injection pump  
Pump designation : PES6P110A720RS534  
EP type number : 0412016077

Governor  
Governor design. : RSV450...1050P1A572  
Governor no. : 0421833428

Cust. part No. :

---

Customer-spec. information  
Customer : IVECO-FRANCE  
Motor : 8365.25.533

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 2.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Tolerance : -300

Check tolerance °NW : + 0.30

tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 10.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spred Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 450  
 Rack travel in mm : 5.00  
 Tolerance mm : + - 0.20  
 Del. quantity cm<sup>3</sup>/1000 strokes : 18.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
 Spred Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.50  
 Tolerance mm : + - 0.20  
 governor spring pre-tension click setting x : 4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
 Aneroid pressure hPa : 900  
 Del. quantity cm<sup>3</sup>/1000 strokes : 108.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spred Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever position degree : 108.0  
 tolerance degree : + - 4.0  
 rack travel mm : 9.00  
 Rated speed rpm : 1095  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1130  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1300  
 rack travel mm : 4.00  
 Rated speed rpm : 1145

##### LOW IDLE

control lever position degree : 80.0  
 tolerance degree : + - 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 450  
 rack travel mm : 4.50  
 Testing:  
 Rated speed rpm : 450  
 rack travel mm : 5.00  
 Tolerance mm : + - 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 560  
 Tolerance 1/min : + - 30

##### TORQUE CONTROL

Rated speed rpm : 1050  
 rack travel mm : 10.05  
 Tolerance mm : + - 0.05

Rated speed rpm : 550  
rack travel mm : 10.10  
Tolerance mm : + - 0.10

Tolerance 1/min : + - 5

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 10.05  
Tolerance mm : + - 0.10

##### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 19.0

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.30  
Tolerance mm : + - 0.10

Rated speed rpm : 500  
Pressure hPa : 450  
rack travel mm : 9.91  
Tolerance mm : + - 0.05

##### LOW IDLE

Rated speed rpm : 450  
rack travel mm : 5.00  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 104.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

#### BREAKAWAY

Rack travel in mm : 9.00  
Rated speed rpm : 1095

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.09.93  
Test oil : ISO 4113

Combination No. : 0403456121

Injection pump  
Pump designation : PES6MW100/321RS1186  
EP type number : 0413406168

Governor  
Governor design. : RQ250/1200MW84-12  
Governor no. : 0420082067

Cust. part No. : 3-7221

---

Customer-spec. information  
Customer : MAN  
Motor : D 0826 LUH03  
Power KW : 157.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

Start-of-delivery mark is at start of delivery of cylinder 1

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 15.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.75  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 15.50  
Tolerance mm : + - 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800

Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever  
position degree : 108.0  
tolerance degree : + - 4.0

rack travel mm : 11.50  
Rated speed rpm : 1253  
Tolerance 1/min : + - 8

rack travel mm : 4.00  
Rated speed rpm : 1305  
Tolerance 1/min : + - 15

rack travel mm : 0.75  
Tolerance mm : + - 0.75  
Rated speed rpm : 1400

rack travel mm : 4.00

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 250  
rack travel mm : 5.60  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 7.00

##### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.75  
Tolerance mm : + - 0.05

Rated speed rpm : 600  
rack travel mm : 12.85  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 12.85  
Tolerance mm : + - 0.05

Rated speed rpm : 1200  
rack travel mm : 12.55  
Tolerance mm : + - 0.05

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.05  
Tolerance mm : + - 0.05

##### MEASUREMENT

Pressure hPa : 200  
Rated speed rpm : 500  
rack travel mm : 10.35

Tolerance mm :  $\pm$  0.05  
 Rated speed rpm : 500  
 Pressure hPa : 1000  
 rack travel mm : 12.85  
 Tolerance mm :  $\pm$  0.05  
 Pressure hPa : 500  
 rack travel mm : 12.15  
 Tolerance mm :  $\pm$  0.15

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1000  
 Rated speed rpm : 600  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 133.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
 hPa : 1000  
 Rated speed rpm : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 133.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
 hPa : 1000  
 Rated speed rpm : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 131.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 75.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  3.0

#### BREAKAWAY

Rack travel in mm : 11.50  
 Rated speed rpm : 1253  
 Tolerance 1/min :  $\pm$  8

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 80.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  13.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.09.93  
Test oil : ISO 4113

Combination No. : 0401876801

Injection pump  
Pump designation : PE6P120A320RS3189  
EP type number : 0411826759

Governor  
Governor design. : RSV250...900P1A421  
: -11  
Governor no. : 0421833425

Cust. part No. : 866382 P01

### Customer-spec. information

Customer : PENTA  
Motor : TWD 710P

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.65  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 7.65  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : + 0.20

governor spring  
 pre-tension  
 click setting x : 6.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 146.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### RATED SPEED

control lever  
 position degree : 51.0  
 tolerance degree : + 4.0

control lever  
 position degree : 101.0  
 tolerance degree : + 4.0  
 rack travel mm : 6.65  
 Rated speed rpm : 925  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 960  
 Tolerance 1/min : + 15  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1070

#### LOW IDLE

control lever  
 position degree : 78.0  
 tolerance degree : + 4.0

control lever  
 position degree : 28.0  
 tolerance degree : + 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 250  
 rack travel mm : 4.10

#### Testing:

Rated speed rpm : 250  
 rack travel mm : 4.60  
 Tolerance mm : + 0.20

rack travel mm : 2.00  
 Rated speed rpm : 370  
 Tolerance 1/min : + 30

#### BREAKAWAY

Rack travel in mm : 6.65  
 Rated speed rpm : 925  
 Tolerance 1/min : + 5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.10.93  
Test oil : ISO 4113

Combination No. : 0402746907

Injection pump  
Pump designation : PES6P120A320RS7231  
EP type number : 0412726844

Governor  
Governor design. : RQV275...1000PA927  
: -1  
Governor no. : 0421813923

Cust. part No. :

### Customer-spec. information

Customer : RVI  
Motor : MIDR 06-20-45  
Power KW : 249.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 160  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 2.5  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.70  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 14.00  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.95  
 Tolerance mm :  $\pm$  0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 244.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 275  
 Rack travel in mm : -9.00  
 Tolerance mm :  $\pm$  0.20  
 Del. quantity cm<sup>3</sup>/1000 strokes : 31.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : -1  
 Rated speed rpm : 1140

Rack travel in mm : 16.50  
 Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure hPa : 1000

Del. quantity cm<sup>3</sup>/1000 strokes : 244.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever position degree : 301.0  
 tolerance degree :  $\pm$  4.0  
 rack travel mm : -1.00  
 Rated speed rpm : 1060  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : -9.90  
 Rated speed rpm : 1215  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : -13.45  
 Tolerance mm :  $\pm$  0.55  
 Rated speed rpm : 1300

##### LOW IDLE

control lever position degree : 246.0  
 tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 275  
 rack travel mm : -9.00  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 200  
 CRT mm max. : < -7.80  
 Rated speed rpm : 370

##### TORQUE CONTROL

Rated speed rpm : 1000  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 500  
 rack travel mm : -6.00

Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -4.70  
Tolerance mm : + - 0.30

Rated speed rpm : 500

Pressure hPa : 240  
rack travel mm : -3.80  
Tolerance mm : + - 0.20

Pressure hPa : 520  
rack travel mm : -1.15  
Tolerance mm : + - 0.05

##### START CUT-OUT

Rated speed rpm : < 195  
Check speed 1/min : < 215

#### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : 1000  
Rated speed rpm : 1000  
Del. quantity cm<sup>3</sup>/1000 strokes : 242.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 6.0

##### Aneroid pressure

hPa : 1000  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 5.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 8.0  
Spread

Tolerance cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 126.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1060  
Tolerance 1/min : + - 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 19.0

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : -9.00  
Tolerance mm : + - 0.20  
Del. quantity cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.10.93  
Test oil : ISO 4113

Combination No. : 0403546018

Injection pump  
Pump designation : PE6MW100/320RS1174  
EP type number : 0413506106

Governor  
Governor design. : RQV325...1500MW100  
Governor no. : 0420083166

Cust. part No. :

---

Customer-spec. information  
Customer : BAUDOUIN  
Motor : 6 F 11 SRE  
Power KW : 225.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 4- 3- 6- 5-  
: 2

Phasing : 0-75-120-195-240  
: -315

Tolerance  
Check  
tolerance °NW : + 0.50

: + 0.75

### BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 11.55  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance cm<sup>3</sup>/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500

Aneroid pressure

hPa : -

Del. quantity

cm<sup>3</sup>/1000 strokes : 130.0

Tolerance

cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance

cm<sup>3</sup>/1000S. : + - 3.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance

cm<sup>3</sup>/1000S. : 6.0

RATED SPEED

control lever

position degree : 54.0

tolerance degree : + - 4.0

rack travel mm : 10.50

Rated speed rpm : 1545

Tolerance 1/min : + - 5

rack travel mm : 4.00

Rated speed rpm : 1650

Tolerance 1/min : + - 15

rack travel mm : 0.50

Tolerance mm : + - 0.50

Rated speed rpm : 1750

rack travel mm : 4.00

LOW IDLE

control lever

position degree : 20.0

tolerance degree : + - 4.0

Testing:

Rated speed rpm : 325

rack travel mm : 4.90  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 6.50

TORQUE CONTROL

Rated speed rpm : 1500

rack travel mm : 11.55

Tolerance mm : + - 0.05

START CUT-OUT

Rated speed rpm : < 230

Check speed 1/min : < 250

BREAKAWAY

Rack travel in mm : 10.50

Rated speed rpm : 1545

Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm<sup>3</sup>/1000 strokes : 125.0

Tolerance

cm<sup>3</sup>/1000 strokes : + - 5.0

Check tolerance

cm<sup>3</sup>/1000S. : + - 8.0

**BOSCH INJ. PUMP TEST SPECIFICATIONS****Note remarks**

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.10.93  
Test oil : ISO 4113

Combination No. : 0402646631

Injection pump  
Pump designation : PE6P120A720RS7307  
EP type number : 0412626905

Governor  
Governor design. : RQ300/1100PA1095  
Governor no. : 0421801693

Cust. part No. : 615.60.08.0279

**Customer-spec. information**

Customer : SNF  
Motor : WD615.48/49

**TEST BENCH REQUIREMENTS**

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 180  
Tolerance l/h : + 20.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.35  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

**BEGINNING OF DELIVERY DIFFERENCE**

Time to cyl. no. : 1  
S.o.d. blocking  
Barrel no. : 1

**BASIC SETTING**

Rated speed rpm : 1100

Rack travel in mm : 12.65  
 Tolerance mm :  $\pm$  0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 229.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 7.20  
 Tolerance mm :  $\pm$  0.20  
 Del. quantity cm<sup>3</sup>/1000 strokes : 21.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve travel mm : 1.75  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1150  
 guide sleeve travel mm : 6.37  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1100  
 guide sleeve travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 426

guide sleeve travel mm : 5.04  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 500  
 guide sleeve travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 1280  
 guide sleeve travel mm : 11.50  
 Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
 Rack travel in mm : 20.00  
 Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 229.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever position degree : 94.0  
 tolerance degree :  $\pm$  4.0

rack travel mm : 11.60  
 Rated speed rpm : 1145  
 Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
 Rated speed rpm : 1200  
 Tolerance 1/min :  $\pm$  15

rack travel mm : 0.70  
 Tolerance mm :  $\pm$  0.70  
 Rated speed rpm : 1300

---

## LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : + - 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 7.20  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min : + - 20

Rated speed rpm : 200  
CRT mm min. : > 9.40

---

## TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.65  
Tolerance mm : + - 0.05

Rated speed rpm : 650  
rack travel mm : 12.65  
Tolerance mm : + - 0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 12.65  
Tolerance mm : + - 0.05

### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 725  
rack travel mm : 12.00  
Tolerance mm : + - 0.10

Pressure hPa : 450  
rack travel mm : 11.00  
Tolerance mm : + - 0.05

---

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 247.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

## BREAKAWAY

Rack travel in mm : 11.60  
Rated speed rpm : 1145  
Tolerance 1/min : + - 8

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.20  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

---

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.93  
Test oil : ISO 4113

Combination No. : 0403456115

Injection pump  
Pump designation : PES6MW100/321RS1215  
EP type number : 0413406205

Governor  
Governor design. : RQ250/1200MW84-7  
Governor no. : 0420082055

Cust. part No. : 3-7126

## Customer-spec. information

Customer : MAN  
Motor : D 0826 LUH 01  
Power KW : 199.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 15.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance Check  
tolerance °NW : + 0.50  
: + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 171.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
 Rack travel in mm : 20.00  
 Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure hPa : 1400  
 Del. quantity cm<sup>3</sup>/1000 strokes : 171.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

##### RATED SPEED

control lever position degree : 99.0  
 tolerance degree : + 4.0  
 rack travel mm : 13.20  
 Rated speed rpm : 1253  
 Tolerance 1/min : + 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1355  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1450

rack travel mm : 4.00

##### LOW IDLE

control lever position degree : 75.0  
 tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 250  
 rack travel mm : 7.00  
 Tolerance mm : + 0.20  
 rack travel mm : 2.00  
 Rated speed rpm : 150  
 CRT mm min. : > 8.50

##### TORQUE CONTROL

Rated speed rpm : 1000  
 rack travel mm : 14.25  
 Tolerance mm : + 0.05  
 Rated speed rpm : 600  
 rack travel mm : 14.25  
 Tolerance mm : + 0.05  
 Rated speed rpm : 800  
 rack travel mm : 14.25  
 Tolerance mm : + 0.05  
 Rated speed rpm : 1200  
 rack travel mm : 14.25  
 Tolerance mm : + 0.05

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1400  
 rack travel mm : 14.25  
 Tolerance mm : + 0.05

##### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 500  
 rack travel mm : 9.35  
 Tolerance mm : + 0.05

Rated speed rpm : 500  
 Pressure hPa : 850  
 rack travel mm : 13.40  
 Tolerance mm :  $\pm$  0.15  
 Pressure hPa : 120  
 rack travel mm : 9.70  
 Tolerance mm :  $\pm$  0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1400  
 Rated speed rpm : 600  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 178.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
 hPa : 1400  
 Rated speed rpm : 800  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 172.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
 hPa : 1400  
 Rated speed rpm : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 167.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 61.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### BREAKAWAY

Rack travel in mm : 13.20  
 Rated speed rpm : 1253  
 Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 70.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  13.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.10.93  
Test oil : ISO 4113

Combination No. : 0402646789

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQ300/1050PA1031-10  
Governor no. : 0421801679

Cust. part No. : 0240740402

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 213.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : + 0.30  
Check tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm	:	12.35
Tolerance mm	:	+ - 0.05
<hr/>		
Del. quantity cm <sup>3</sup> /1000 strokes	:	202.0
<hr/>		
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 1.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 4.0
<hr/>		
Spred		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	5.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	9.0
<hr/>		
2nd speed rpm	:	300
<hr/>		
Rack travel in mm	:	5.70
Tolerance mm	:	+ - 0.30
Del. quantity cm <sup>3</sup> /1000 strokes	:	19.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 3.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 6.0
Spred		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance cm <sup>3</sup> /1000S.	:	10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	:	300
guide sleeve		
travel mm	:	2.58
Tolerance mm	:	+ - 0.10
<hr/>		
Rated speed rpm	:	1103
guide sleeve		
travel mm	:	6.37
Tolerance mm	:	+ - 0.10
<hr/>		
Rated speed rpm	:	1050
guide sleeve		
travel mm	:	6.00
Tolerance mm	:	+ - 0.10
<hr/>		
Rated speed rpm	:	405

guide sleeve		
travel mm	:	5.10
Tolerance mm	:	+ - 0.10
<hr/>		
Rated speed rpm	:	480
guide sleeve		
travel mm	:	6.00
Tolerance mm	:	+ - 0.10
<hr/>		
Rated speed rpm	:	1280
guide sleeve		
travel mm	:	11.50
Tolerance mm	:	+ - 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm	:	600
Rack travel in mm	:	20.00
Tolerance mm	:	+ - 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1050
Aneroid pressure		
hPa	:	800
Del. quantity cm <sup>3</sup> /1000 strokes	:	202.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 4.0
Spred		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0

##### RATED SPEED

control lever		
position degree	:	95.0
tolerance degree	:	+ - 4.0
<hr/>		
rack travel mm	:	11.35
Rated speed rpm	:	1098
Tolerance 1/min	:	+ - 8
<hr/>		
rack travel mm	:	4.00
Rated speed rpm	:	1180
Tolerance 1/min	:	+ - 15
<hr/>		
rack travel mm	:	0.75
Tolerance mm	:	+ - 0.75
Rated speed rpm	:	1300

---

#### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. : > 8.00

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 800  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Rated speed rpm : 400  
Pressure hPa : -  
rack travel mm : 9.85  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 200  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.10

---

#### START CUT-OUT

Rated speed rpm : < 220  
Check speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 800  
Rated speed rpm : 550  
Del. quantity cm<sup>3</sup>/1000 strokes : 197.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : 350  
Rated speed rpm : 400  
Del. quantity cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 11.35  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.10.93  
Test oil : ISO 4113

Combination No. : 0402046852

Injection pump  
Pump designation : PES6P100A320LS3323  
EP type number : 0412006708

Governor  
Governor design. : RQV350...1300PA1087  
Governor no. : 0421814064

Cust. part No. : 1821958C91

---

Customer-spec. information  
Customer : NAVISTAR  
Motor : DTA-408  
Power KW : 112.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413058

Inlet press. bar : 2.8

Overflow quantity  
min. l/h : 220  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750015

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

---

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Prestroke mm : 3.00  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 15.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1300

---

Rack travel in mm : 14.35  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 3.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 132.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 3.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

RATED SPEED

control lever  
 position degree : 67.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 120.0  
 tolerance degree : + - 6.0  
 rack travel mm : 13.30  
 Rated speed rpm : 1390  
 Tolerance 1/min : + - 15  
 rack travel mm : 4.00  
 Rated speed rpm : 1560  
 Tolerance 1/min : + - 5  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1650

LOW IDLE

control lever  
 position degree : 72.0  
 tolerance degree : + - 6.0  
 control lever  
 position degree : 19.0  
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 350  
 rack travel mm : 6.30  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 275  
 CRT mm min. : > 8.00  
 Rated speed rpm : 435

TORQUE CONTROL

Rated speed rpm : 1300  
 rack travel mm : 14.35  
 Tolerance mm : + - 0.05

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 800  
 Pressure hPa : 1200  
 rack travel mm : 14.35  
 Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 800  
 rack travel mm : 10.00  
 Tolerance mm : + - 0.20  
 Rated speed rpm : 800  
 Pressure hPa : 660  
 rack travel mm : 13.30  
 Tolerance mm : + - 0.20  
 Pressure hPa : 285  
 rack travel mm : 11.15  
 Tolerance mm : + - 0.05

---

#### START CUT-OUT

Rated speed rpm : < 280  
Check  
speed 1/min : < 290

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 67.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

#### BREAKAWAY

Rack travel in mm : 13.30  
Rated speed rpm : 1390  
Tolerance 1/min : + - 15

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + - 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 25.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.93  
Test oil : ISO 4113

Combination No. : 0401876792

Injection pump  
Pump designation : PE6P120A320RS3313  
EP type number : 0411826807

Governor  
Governor design. : RSV350...1100P8A558  
Governor no. : 0421833397

Cust. part No. : 1342533

---

Customer-spec. information  
Customer : SCANIA  
Motor : D9

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901104

Opening pressure  
bar : 251.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.65  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 144.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0  
 2nd speed rpm : 350  
 Rack travel in mm : 4.90  
 Tolerance mm : + - 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 18.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : + - 0.20

governor spring  
 pre-tension  
 click setting x : 6.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 144.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### RATED SPEED

control lever  
 position degree : 63.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 113.0  
 tolerance degree : + - 4.0

rack travel mm : 10.60  
 Rated speed rpm : 1145  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1235  
 Tolerance 1/min : + - 15

rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1350

rack travel mm : 4.00  
 Rated speed rpm : 1245

#### LOW IDLE

control lever  
 position degree : 75.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 24.0  
 tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
 rack travel mm : 4.70

Testing:

Rated speed rpm : 350  
 rack travel mm : 4.20  
 Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 535  
Tolerance 1/min : + - 30

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.65  
Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### MEASUREMENT

Pressure hPa : 210  
rack travel mm : 10.70  
Tolerance mm : + - 0.15

Pressure hPa : 280  
rack travel mm : 11.15  
Tolerance mm : + - 0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

#### BREAKAWAY

Rack travel in mm : 10.60  
Rated speed rpm : 1145  
Tolerance 1/min : + - 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.30  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 24.0

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.90  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.93  
Test oil : ISO 4113

Combination No. : 0401876793

Injection pump  
Pump designation : PE6P120A320RS3314  
EP type number : 0411826806

Governor  
Governor design. : RSV350...1100P1A559  
Governor no. : 0421833389

Cust. part No. : 1342534

### Customer-spec. information

Customer : SCANIA  
Motor : D9

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901104

Opening pressure  
bar : 251.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.45  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 152.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 152.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### RATED SPEED

control lever  
position degree : 40.0  
tolerance degree : + 4.0

control lever  
position degree : 90.0  
tolerance degree : + 4.0

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### MEASUREMENT

Pressure hPa : 180  
rack travel mm : 10.50  
Tolerance mm : + 0.10

Pressure hPa : 250  
rack travel mm : 10.95  
Tolerance mm : + 0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.00  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.93  
Test oil : ISO 4113

Combination No. : 0401876800

Injection pump  
Pump designation : PE6P120A320RS3313  
EP type number : 0411826807

Governor  
Governor design. : RSV350...1050P8A558  
: -1  
Governor no. : 0421833423

Cust. part No. : 1351267

---

Customer-spec. information  
Customer : SCANIA  
Motor : D9

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1688901104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

Start-of-delivery setting with ROBO diaphragm.

---

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

---

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.75

---

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm : 12.35  
Tolerance mm : ± 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 160.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0  
 2nd speed rpm : 350  
 Rack travel in mm : 4.90  
 Tolerance mm : + - 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 18.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.50  
 Tolerance mm : + - 0.20  
 governor spring  
 pre-tension  
 click setting x : 6.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 160.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
 position degree : 56.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 106.0  
 tolerance degree : + - 4.0  
 rack travel mm : 10.10  
 Rated speed rpm : 1095  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1170  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1300

##### LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 24.0  
 tolerance degree : + - 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 350  
 rack travel mm : 4.70

##### Testing:

Rated speed rpm : 350  
 rack travel mm : 4.20  
 Tolerance mm : + - 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 535  
 Tolerance 1/min : + - 30

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.15  
Tolerance mm : + - 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### MEASUREMENT

Pressure hPa : 180  
rack travel mm : 10.50  
Tolerance mm : + - 0.15

Pressure hPa : 280  
rack travel mm : 11.15  
Tolerance mm : + - 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

#### BREAKAWAY

Rack travel in mm : 10.10  
Rated speed rpm : 1095  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.00  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 24.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.90  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.93  
Test oil : ISO 4113

Combination No. : 0402646606

Injection pump  
Pump designation : PE6P120A720RS71880  
EP type number : 0412626846

Governor  
Governor design. : RQV200...950PA725  
: -10  
Governor no. : 0421814002

Cust. part No. : 1338073

### Customer-spec. information

Customer : SCANIA  
Motor : DSC 11 32

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901104

Opening pressure  
bar : 251.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

Start-of-delivery setting with R080 diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.55  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 214.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0  
 2nd speed rpm : 250  
 Rack travel in mm : 4.70  
 Tolerance mm : + - 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1150

Rack travel in mm : 9.50  
 Tolerance mm : + - 2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 214.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
 position degree : 59.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 114.0  
 tolerance degree : + - 4.0  
 rack travel mm : 11.50  
 Rated speed rpm : 995  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1105  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1250

##### LOW IDLE

control lever  
 position degree : 64.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 10.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 250  
 rack travel mm : 4.70  
 Tolerance mm : + - 0.10

rack travel mm : 2.00  
 Rated speed rpm : 400  
 Tolerance 1/min : + - 30

Rated speed rpm : 150

CRT mm min. : > 6.20

##### TORQUE CONTROL

Rated speed rpm : 950

rack travel mm : 12.55  
Tolerance mm : + - 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### MEASUREMENT

Pressure hPa : 270  
rack travel mm : 11.00  
Tolerance mm : + - 0.15

Pressure hPa : 440  
rack travel mm : 12.05  
Tolerance mm : + - 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

##### Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

#### BREAKAWAY

Rack travel in mm : 11.50  
Rated speed rpm : 995  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 24.0

---

#### LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.93  
Test oil : ISO 4113

Combination No. : 0402646608

Injection pump  
Pump designation : PE6P120A720RS7188J  
EP type number : 0412626877

Governor  
Governor design. : RQ200/950PA745-3  
Governor no. : 0421801579

Cust. part No. : 1344920

### Customer-spec. information

Customer : SCANIA  
Motor : DSC 11 71

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 235  
Tolerance l/h : + 20.0

Test nozzle holder  
assembly : 1688901104

Opening pressure  
bar : 251.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

### REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.75  
Tolerance mm : + 0.05

Del. quantity cm<sup>3</sup>/1000 strokes : 157.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0  
 2nd speed rpm : 250  
 Rack travel in mm : 4.70  
 Tolerance mm : + 0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 157.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread

Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever position degree : 41.0  
 tolerance degree : + 4.0  
 control lever position degree : 95.0  
 tolerance degree : + 4.0  
 rack travel mm : 9.70  
 Rated speed rpm : 995  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1100  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1250

##### LOW IDLE

control lever position degree : 62.0  
 tolerance degree : + 4.0

control lever position degree : 7.0  
 tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 250  
 rack travel mm : 4.70  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 340  
 Tolerance 1/min : + 20

Rated speed rpm : 150

CRT mm min. : > 6.00

##### TORQUE CONTROL

Rated speed rpm : 950  
 rack travel mm : 10.75

Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

#### BREAKAWAY

Rack travel in mm : 9.70  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.93  
Test oil : ISO 4113

Combination No. : 0402646788

Injection pump  
Pump designation : PE6P120A320LS7858  
EP type number : 0412626875

Governor  
Governor design. : RQ300/1050PA1031-11  
Governor no. : 0421801680

Cust. part No. : 0240740302

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 200.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance check : + 0.30  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.75

Tolerance mm :  $\pm$  0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 190.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 5.20  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve travel mm : 2.59  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 1103  
 guide sleeve travel mm : 6.38  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 1050  
 guide sleeve travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 410  
 guide sleeve travel mm : 5.25  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 480  
 guide sleeve travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 1280  
 guide sleeve travel mm : 11.50  
 Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
 Rack travel in mm : 20.00  
 Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
 Aneroid pressure hPa : 800  
 Del. quantity cm<sup>3</sup>/1000 strokes : 190.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever position degree : 94.0  
 tolerance degree :  $\pm$  4.0  
 rack travel mm : 10.75  
 Rated speed rpm : 1098  
 Tolerance 1/min :  $\pm$  8  
 rack travel mm : 4.00  
 Rated speed rpm : 1175  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : 0.75  
 Tolerance mm :  $\pm$  0.75  
 Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. : > 7.50

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 800  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Rated speed rpm : 400  
Pressure hPa : -  
rack travel mm : 9.75  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 200  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.10

START CUT-OUT

Rated speed rpm : < 220  
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 800  
Rated speed rpm : 550  
Del. quantity cm<sup>3</sup>/1000 strokes : 184.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : 350  
Rated speed rpm : 400  
Del. quantity cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 10.75  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 220.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.10.93  
Test oil : ISO 4113

Combination No. : 0403476081B

Injection pump  
Pump designation : PES6MW100/720RS1196  
: -1  
EP type number : 0413406219

Governor  
Governor design. : RSV350...1050MW0A338  
Governor no. : 0420085138

Cust. part No. :

---

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 916 T  
Power KW : 150.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.85  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + 0.35

governor spring  
pre-tension  
click setting x : 5.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure

hPa : 1300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spred  
Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

##### RATED SPEED

control lever  
position degree : 92.0  
tolerance degree : + 4.0

rack travel mm : 9.80  
Rated speed rpm : 1038  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1065  
Tolerance 1/min : + 15

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 1200

rack travel mm : 4.00  
Rated speed rpm : 1075

##### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 4.20

##### Testing:

Rated speed rpm : 400  
rack travel mm : 3.70  
Tolerance mm : + 0.20

rack travel mm : 2.00  
Rated speed rpm : 450  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 10.85  
Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 10.85  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 10.85  
Tolerance mm : + 0.05

Rated speed rpm : 450  
rack travel mm : 12.35  
Tolerance mm : + 0.10

---

**ANEROID/ALTITUDE  
COMPENSATOR TEST****SETTING**

Rated speed rpm : 550  
Pressure hPa : 1300  
rack travel mm : 10.85  
Tolerance mm : + - 0.05

**MEASUREMENT**

Pressure hPa : -  
Rated speed rpm : 550  
rack travel mm : 9.65  
Tolerance mm : + - 0.05

Rated speed rpm : 550

Pressure hPa : 385  
rack travel mm : 10.00  
Tolerance mm : + - 0.10

Pressure hPa : 480  
rack travel mm : 10.60  
Tolerance mm : + - 0.10

---

**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

---

**BREAKAWAY**

Rack travel in mm : 9.80  
Rated speed rpm : 1038  
Tolerance 1/min : + - 8

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + - 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 8.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.10.93  
Test oil : ISO 4113

Combination No. : 0403476081F

Injection pump  
Pump designation : PES6MW100/720RS1196  
EP type number : -1  
: 0413406219

Governor  
Governor design. : RSV350...1050MW0A338  
Governor no. : 0420085138

Cust. part No. :

---

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 916 T  
Power KW : 180.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.50  
Check tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.45  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + - 0.35

governor spring  
pre-tension  
click setting x : 5.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

##### RATED SPEED

control lever  
position degree : 104.0  
tolerance degree : + - 4.0

rack travel mm : 11.40  
Rated speed rpm : 1075  
Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 1135  
Tolerance 1/min : + - 10

rack travel mm : 1.00  
Tolerance mm : + - 0.70  
Rated speed rpm : 1250

rack travel mm : 4.00  
Rated speed rpm : 1170

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 8.50

##### Testing:

Rated speed rpm : 350  
rack travel mm : 5.70  
Tolerance mm : + - 0.20

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.45  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 12.45  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 12.45  
Tolerance mm : + - 0.05

Rated speed rpm : 400  
rack travel mm : 13.95  
Tolerance mm : + - 0.05

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 600  
Pressure hPa : 1300  
rack travel mm : 12.45  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa	:	-
Rated speed rpm	:	600
rack travel mm	:	10.05
Tolerance mm	:	+ - 0.05
Rated speed rpm	:	600
rack travel mm	:	10.80
Tolerance mm	:	+ - 0.10
Pressure hPa	:	700
rack travel mm	:	12.00
Tolerance mm	:	+ - 0.10

Rack travel in mm	:	11.40
Rated speed rpm	:	1075
Tolerance 1/min	:	+ - 5

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	1300
Rated speed rpm	:	500
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	151.5
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ - 1.5
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ - 4.0
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	7.0

Aneroid pressure		
hPa	:	1300
Rated speed rpm	:	800
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	154.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ - 1.5
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ - 4.0

Aneroid pressure		
hPa	:	-
Rated speed rpm	:	600
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	114.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ - 1.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ - 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	20.25
Tolerance mm	:	+ - 0.75
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	132.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ - 5.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ - 8.0

---

#### BREAKAWAY

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.10.93  
Test oil : ISO 4113

Combination No. : 0403476081G

Injection pump  
Pump designation : PES6MW100/720RS1196  
: -1  
EP type number : 0413406219

Governor  
Governor design. : RSV350...1050MW0A338  
Governor no. : 0420085138

Cust. part No. :

---

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 916 TI  
Power KW : 170.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.75  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spread Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

governor spring pre-tension  
 click setting x : 5.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Aneroid pressure hPa : 1300  
 Del. quantity cm<sup>3</sup>/1000 strokes : 143.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spread Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

##### RATED SPEED

control lever position degree : 102.0  
 tolerance degree : + 4.0  
 rack travel mm : 10.70  
 Rated speed rpm : 925  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1000  
 Tolerance 1/min : + 10  
 rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1100  
 rack travel mm : 4.00  
 Rated speed rpm : 1010

##### LOW IDLE

control lever position degree : 76.0  
 tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 350  
 rack travel mm : 4.60

##### Testing:

Rated speed rpm : 400  
 rack travel mm : 3.60  
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 900  
 rack travel mm : 11.75  
 Tolerance mm : + 0.05

Rated speed rpm : 500  
 rack travel mm : 11.75  
 Tolerance mm : + 0.05

Rated speed rpm : 600  
 rack travel mm : 11.75  
 Tolerance mm : + 0.05

Rated speed rpm : 450  
 rack travel mm : 13.25  
 Tolerance mm : + 0.05

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 600  
Pressure hPa : 1300  
rack travel mm : 11.75  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 10.45  
Tolerance mm : + - 0.05

Rated speed rpm : 600

Pressure hPa : 440  
rack travel mm : 11.05  
Tolerance mm : + - 0.10

Pressure hPa : 570  
rack travel mm : 11.70  
Tolerance mm : + - 0.10

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

#### BREAKAWAY

Rack travel in mm : 10.70  
Rated speed rpm : 925  
Tolerance 1/min : + - 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + - 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 8.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.11.93  
Test oil : ISO 4113

Combination No. : 0400864083

Injection pump  
Pump designation : PES4A950410/3RS2789  
EP type number : 0410894995

Governor  
Governor design. : RSV325...1175A5C2163  
: -6L  
Governor no. : 0420232548

Cust. part No. :

### Customer-spec. information

Customer : KHD  
Motor : F4L913  
Power KW : 55.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Prestroke mm : 3.05  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm : 11.95  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

2nd speed rpm : 325  
 Rack travel in mm : 9.30  
 Tolerance mm : + - 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 5.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 5.5

---

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

GUIDE SLEEVE POSITION

---

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.50  
 Tolerance mm : + - 0.20  
 governor spring pre-tension  
 click setting x : 3.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

---

Rated speed rpm : 1175  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 75.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

---

RATED SPEED

---

control lever position degree : 101.0  
 tolerance degree : + - 4.0  
 rack travel mm : 10.90  
 Rated speed rpm : 1220  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1260  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1430  
 rack travel mm : 4.00  
 Rated speed rpm : 1285

---

LOW IDLE

control lever position degree : 69.0  
 tolerance degree : + - 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 325  
 rack travel mm : 8.80  
 Testing:  
 Rated speed rpm : 325  
 rack travel mm : 9.30  
 Tolerance mm : + - 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 500  
 Tolerance 1/min : + - 30  
 Rated speed rpm : 100  
 CRT mm min. : > 19.50

---

TORQUE CONTROL

Rated speed rpm : 500  
 rack travel mm : 12.40  
 Tolerance mm : + - 0.05  
 Rated speed rpm : 800  
 rack travel mm : 12.35  
 Tolerance mm : + - 0.05  
 Rated speed rpm : 950  
 rack travel mm : 12.10

Tolerance mm : + - 0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity

cm<sup>3</sup>/1000 strokes : 60.0

Tolerance

cm<sup>3</sup>/1000 strokes : + - 1.5

Check tolerance

cm<sup>3</sup>/1000S. : + - 4.0

Aneroid pressure

hPa : -

Rated speed rpm : 800

Del. quantity

cm<sup>3</sup>/1000 strokes : 70.5

Tolerance

cm<sup>3</sup>/1000 strokes : + - 1.5

Check tolerance

cm<sup>3</sup>/1000S. : + - 4.0

---

#### BREAKAWAY

Rack travel in mm : 10.90

Rated speed rpm : 1220

Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.25

Tolerance mm : + - 0.75

Del. quantity

cm<sup>3</sup>/1000 strokes : 125.0

Tolerance

cm<sup>3</sup>/1000 strokes : + - 5.0

Check tolerance

cm<sup>3</sup>/1000S. : + - 8.0

---

#### LOW IDLE

Rated speed rpm : 325

rack travel mm : 9.30

Tolerance mm : + - 0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 13.0

Tolerance

cm<sup>3</sup>/1000 strokes : + - 3.0

Check tolerance

cm<sup>3</sup>/1000S. : + - 5.5

Spred

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance

cm<sup>3</sup>/1000S. : 5.5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.11.93  
Test oil : ISO 4113

Combination No. : 0401876346

Injection pump  
Pump designation : PE6P110A320RS497  
EP type number : 0411816165

Governor  
Governor design. : RSV250...1200P1A374  
: -13  
Governor no. : 0421833424

Cust. part No. : 866537-P01

### Customer-spec. information

Customer : PENTA  
Motor : TID 72A

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.85  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 139.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : + - 0.20

governor spring  
 pre-tension  
 click setting x : 5.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 1500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 139.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

#### RATED SPEED

control lever  
 position degree : 68.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 118.0  
 tolerance degree : + - 4.0  
 rack travel mm : 11.85  
 Rated speed rpm : 1215  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1280  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1400

#### LOW IDLE

control lever  
 position degree : 77.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 27.0  
 tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
 rack travel mm : 5.20

#### Testing:

Rated speed rpm : 250  
 rack travel mm : 4.70  
 Tolerance mm : + - 0.10

rack travel mm : 2.00  
 Rated speed rpm : 340  
 Tolerance 1/min : + - 30

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1500  
 rack travel mm : 12.85  
 Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : -

Rated speed rpm : 500  
rack travel mm : 9.40  
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 910  
rack travel mm : 3.10  
Tolerance mm : + - 0.10

Pressure hPa : 310  
rack travel mm : 0.25  
Tolerance mm : + - 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 77.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

#### BREAKAWAY

Rack travel in mm : 11.85  
Rated speed rpm : 1215  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + - 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 19.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.11.93  
Test oil : ISO 4113

Combination No. : 0401876803

Injection pump  
Pump designation : PE6P110A320RS3266  
EP type number : 0411816777

Governor  
Governor design. : RSV350...1250POA578  
Governor no. : 0421833434

Cust. part No. : 866200-MEMO+REF-PPE

### Customer-spec. information

Customer : PENTA  
Motor : TWD 630ME

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1457413046

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 2.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.75  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : + 0.20

governor spring  
 pre-tension  
 click setting x : 2.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 133.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### RATED SPEED

control lever  
 position degree : 46.0  
 tolerance degree : + 4.0

control lever  
 position degree : 96.0  
 tolerance degree : + 4.0  
 rack travel mm : 10.75  
 Rated speed rpm : 1270  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1305  
 Tolerance 1/min : + 15  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1340

#### LOW IDLE

control lever  
 position degree : 68.0  
 tolerance degree : + 4.0

control lever  
 position degree : 18.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
 rack travel mm : 5.50

Testing:

rack travel mm : 2.00  
 Rated speed rpm : 390  
 Tolerance 1/min : + 30

#### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1200  
 rack travel mm : 11.75  
 Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -

Rated speed rpm : 500  
rack travel mm : 9.20  
Tolerance mm : + - 0.20

Rated speed rpm : 500

Pressure hPa : 785  
rack travel mm : 2.10  
Tolerance mm : + - 0.10

Pressure hPa : 240  
rack travel mm : 0.20  
Tolerance mm : + - 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + - 4.0

---

#### BREAKAWAY

Rack travel in mm : 10.75  
Rated speed rpm : 1270  
Tolerance 1/min : + - 5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.11.93  
Test oil : ISO 4113

Combination No. : 0402616803

Injection pump  
Pump designation : PE6P130A300RS7274  
EP type number : 0412636824

Governor  
Governor design. :  
Governor no. :

Cust. part No. : 866146-P01

### Customer-spec. information

Customer : PENTA  
Motor : TAD1230G(GENSET)

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901103

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 354.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure hPa : -

Del. quantity cm<sup>3</sup>/1000 strokes : 354.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

LOW IDLE

Testing:

Rated speed rpm : 300

rack travel mm : 4.40

Tolerance mm : + 0.20

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.11.93  
Test oil : ISO 4113

Combination No. : 0402036748

Injection pump  
Pump designation : PES6P120A320/3RS3297  
EP type number : 0412026753

Governor  
Governor design. : RQV375...1000PA1022  
Governor no. : 0421813981

Cust. part No. :

---

Customer-spec. information  
Customer : SACM  
Motor : UD18L6R3D  
Power KW : 219.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance check  
tolerance °NW : + 0.30  
: + 0.75

### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.95  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 375

Rack travel in mm : 5.10  
 Tolerance mm : + 0.20

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1150

Rack travel in mm : 11.20  
 Tolerance mm : + 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : -

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 210.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### RATED SPEED

control lever  
 position degree : 121.0  
 tolerance degree : + 4.0

rack travel mm : 10.90  
 Rated speed rpm : 1045  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1145  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1350

#### LOW IDLE

control lever  
 position degree : 72.0  
 tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 375  
 rack travel mm : 5.10  
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 6.60

Rated speed rpm : 435

#### START CUT-OUT

Rated speed rpm : < 295  
 Check  
 speed 1/min : < 315

#### BREAKAWAY

Rack travel in mm : 10.90  
 Rated speed rpm : 1045  
 Tolerance 1/min : + 5

#### STARTING FUEL DELIVERY

Det. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 19.0

---

LOW IDLE

Rated speed rpm : 375  
rack travel mm : 5.10  
Tolerance mm : + - 0.20  
Det. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.02.93  
Test oil : ISO 4113

Combination No. : 0403446315

Injection pump  
Pump designation : PES6MW100/320LS1230  
EP type number : 0413406222

Governor  
Governor design. : RQ275/950MW130  
Governor no. : 0420082071

Cust. part No. :

Customer-spec. information  
Customer : RBOS-HU  
Motor : D10UTS150  
Power KW : 150.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Prestroke mm : 3.85  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 13.00  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

### BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 700

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure hPa : 800  
Del. quantity cm<sup>3</sup>/1000 strokes : 131.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance cm<sup>3</sup>/1000S. : 7.5

---

RATED SPEED

control lever position degree : 94.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.10  
Rated speed rpm : 1013  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.55  
Tolerance mm :  $\pm$  0.45  
Rated speed rpm : 1200

rack travel mm : 4.00

---

LOW IDLE

control lever position degree : 74.0  
tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm	:	275
rack travel mm	:	7.90
Tolerance mm	:	$\pm$ 0.10
rack travel mm	:	2.00
Rated speed rpm	:	150
CRT mm min.	:	> 9.50

---

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	500
Pressure hPa	:	800
rack travel mm	:	13.15
Tolerance mm	:	$\pm$ 0.05

MEASUREMENT

Pressure hPa	:	-
Rated speed rpm	:	500
rack travel mm	:	11.05
Tolerance mm	:	$\pm$ 0.05

Rated speed rpm : 500

Pressure hPa	:	310
rack travel mm	:	12.85
Tolerance mm	:	$\pm$ 0.05

Pressure hPa	:	150
rack travel mm	:	11.85
Tolerance mm	:	$\pm$ 0.15

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	-
Rated speed rpm	:	500
Del. quantity cm <sup>3</sup> /1000 strokes	:	96.0
Tolerance cm <sup>3</sup> /1000 strokes	:	$\pm$ 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	$\pm$ 3.0

---

BREAKAWAY

Rack travel in mm : 12.10  
Rated speed rpm : 1013  
Tolerance 1/min : + - 8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 13.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.12.93  
Test oil : ISO 4113

Combination No. : 0401846964

Injection pump  
Pump designation : PE6P110A320RS3302  
EP type number : 0411816787

Governor  
Governor design. : RQ300/1000PA1012-1  
Governor no. : 0421801648

Cust. part No. : 1250792

### Customer-spec. information

Customer : DAF  
Motor : LT 195 L  
Power KW : 195.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

### REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.75  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 14.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 14.45  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 174.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

2nd speed rpm : 300

---

Rack travel in mm : 7.70  
 Tolerance mm : + - 0.10

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 30.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + - 5.0

---

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.06  
 Tolerance mm : + - 0.10

Rated speed rpm : 1060  
 guide sleeve  
 travel mm : 6.35  
 Tolerance mm : + - 0.10

Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + - 0.10

Rated speed rpm : 363  
 guide sleeve  
 travel mm : 4.56  
 Tolerance mm : + - 0.10

Rated speed rpm : 440  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + - 0.10

Rated speed rpm : 1210  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
 Tolerance mm : + - 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure  
 hPa : -

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 174.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + - 3.5

---

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

tolerance degree : + - 4.0  
 rack travel mm : 13.40  
 Rated speed rpm : 1053  
 Tolerance 1/min : + - 8

rack travel mm : 4.00  
 Rated speed rpm : 1130  
 Tolerance 1/min : + - 15

rack travel mm : 0.75  
 Tolerance mm : + - 0.75  
 Rated speed rpm : 1300

##### LOW IDLE

tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 300  
 rack travel mm : 7.70  
 Tolerance mm : + - 0.10

rack travel mm : 2.50  
 Rated speed rpm : 370  
 Tolerance 1/min : + - 20

Rated speed rpm : 200

CRT mm min. : > 11.00

---

#### TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 14.45  
Tolerance mm : + - 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 14.55  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : 530  
Rated speed rpm : 600  
rack travel mm : 14.05  
Tolerance mm : + - 0.05

Rated speed rpm : 600

Pressure hPa : -  
rack travel mm : 12.40  
Tolerance mm : + - 0.10

Pressure hPa : 380  
rack travel mm : 13.10  
Tolerance mm : + - 0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

---

#### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1053  
Tolerance 1/min : + - 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + - 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 23.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.70  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.12.93  
Test oil : ISO 4113

Combination No. : 0401846972

Injection pump  
Pump designation : PE6P110A320RS3302Y  
EP type number : 0411816790

Governor  
Governor design. : RQ300/1000PA1012-1  
Governor no. : 0421801648

Cust. part No. : 1253697

## Customer-spec. information

Customer : DAF  
Motor : LT 160 L  
Power KW : 160.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.75  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 13.00  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.5

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5  
 2nd speed rpm : 300  
 Rack travel in mm : 7.50  
 Tolerance mm : + - 0.20  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 30.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.08  
 Tolerance mm : + - 0.10

Rated speed rpm : 1060  
 guide sleeve  
 travel mm : 6.36  
 Tolerance mm : + - 0.10

Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + - 0.10

Rated speed rpm : 372  
 guide sleeve  
 travel mm : 5.03  
 Tolerance mm : + - 0.10

Rated speed rpm : 440  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + - 0.10

Rated speed rpm : 1210  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
 Rack travel in mm : 20.00  
 Tolerance mm : + - 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 142.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 3.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever  
 position degree : 99.0  
 tolerance degree : + - 4.0

rack travel mm : 12.00  
 Rated speed rpm : 1053  
 Tolerance 1/min : + - 8

rack travel mm : 4.00  
 Rated speed rpm : 1120  
 Tolerance 1/min : + - 15

rack travel mm : 0.75  
 Tolerance mm : + - 0.75  
 Rated speed rpm : 1300

##### LOW IDLE

control lever  
 position degree : 78.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 300  
 rack travel mm : 7.50  
 Tolerance mm : + - 0.10

rack travel mm : 2.50  
Rated speed rpm : 370  
Tolerance 1/min : + 20  
  
Rated speed rpm : 200  
  
CRT mm min. : > 11.00

#### TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 13.05  
Tolerance mm : + 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 13.05  
Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : 360  
Rated speed rpm : 600  
rack travel mm : 12.75  
Tolerance mm : + 0.05

Rated speed rpm : 600

Pressure hPa : -  
rack travel mm : 11.70  
Tolerance mm : + 0.10

Pressure hPa : 270  
rack travel mm : 12.10  
Tolerance mm : + 0.10

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Del. quantity cm<sup>3</sup>/1000 strokes : 109.5  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 3.5

#### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1053  
Tolerance 1/min : + 8

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + 0.75  
Del. quantity cm<sup>3</sup>/1000 strokes : 350.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance cm<sup>3</sup>/1000S. : + 23.0

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.50  
Tolerance mm : + 0.20  
Del. quantity cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance cm<sup>3</sup>/1000S. : + 5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 11.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.01.94  
Test oil : ISO 4113

Combination No. : 0401846849

Injection pump  
Pump designation : PE6P120A320RS3196  
EP type number : 0411826763

Governor  
Governor design. : RQV200...1100PA729  
: -1  
Governor no. : 0421813470

Cust. part No. :

---

Customer-spec. information  
Customer : SCANIA  
Motor : DS9 06

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1688901019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

---

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check tolerance °NW : + 0.75

---

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

---

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.45  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0  
 2nd speed rpm : 225  
 Rack travel in mm : 5.00  
 Tolerance mm : + 0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 24.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread Tolerance cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1120

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 134.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

##### RATED SPEED

control lever position degree : 59.0  
 tolerance degree : + 4.0  
 control lever position degree : 114.0  
 tolerance degree : + 4.0  
 rack travel mm : 9.40  
 Rated speed rpm : 1145  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1265  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1350

##### LOW IDLE

control lever position degree : 64.0  
 tolerance degree : + 4.0

control lever position degree : 9.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 225  
 rack travel mm : 5.00  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 330  
 Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 6.20

##### TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 10.45  
 Tolerance mm : + 0.05

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 149.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

---

### BREAKAWAY

Rack travel in mm : 9.40  
Rated speed rpm : 1145  
Tolerance 1/min : + - 5

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + - 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 355.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 24.0

---

### LOW IDLE

Rated speed rpm : 225  
rack travel mm : 5.00  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

**BOSCH INJ. PUMP TEST SPECIFICATIONS**

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.01.94  
Test oil : ISO 4113

Combination No. : 0402630812

Injection pump  
Pump designation : PE12P120A120RS7306  
EP type number : 0412620839

Governor  
Governor design. : RQV325...1500PA930  
Governor no. : 0421813804

Cust. part No. : 14 75 061 0X

## Customer-spec. information

Customer : BAUDOUIN  
Motor : 12 F 120 SRE  
Power KW : 618.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 20.0

Test nozzle holder  
assembly : 1688901019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.40  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1-12- 9- 5- 3  
: - 8- 11- 4- 2  
: - 10- 7- 6

Phasing : 0-45-60-105-120  
: -165-180-225-240  
: -285-300-345

Tolerance  
Check  
tolerance °NW : + 0.30  
: + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

---

#### BASIC SETTING

Rated speed rpm : 1500

---

Rack travel in mm : 12.75  
Tolerance mm : + - 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 187.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

2nd speed rpm : 325

Rack travel in mm : 7.40  
Tolerance mm : + - 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.14  
Tolerance mm : + - 0.10

Rated speed rpm : 1555  
guide sleeve  
travel mm : 8.60  
Tolerance mm : + - 0.10

Rated speed rpm : 899  
guide sleeve  
travel mm : 3.88

Tolerance mm : + - 0.20

Rated speed rpm : 381  
guide sleeve  
travel mm : 1.88  
Tolerance mm : + - 0.20

Rated speed rpm : 431  
guide sleeve  
travel mm : 2.32  
Tolerance mm : + - 0.20

Rated speed rpm : 1810  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + - 0.50

---

#### GUIDE SLEEVE POSITION

Rated speed rpm : 1700

Rack travel in mm : 6.50  
Tolerance mm : + - 1.50

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 187.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

#### RATED SPEED

control lever  
position degree : 123.0  
tolerance degree : + - 4.0

rack travel mm : 11.70  
Rated speed rpm : 1545  
Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 1670  
Tolerance 1/min : + - 15

rack travel mm : 0.50

Tolerance mm : + 0.50  
Rated speed rpm : 1750

#### LOW IDLE

control lever position degree : 88.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 325  
rack travel mm : 7.40  
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 8.50

Rated speed rpm : 360

#### TORQUE CONTROL

Rated speed rpm : 1500  
rack travel mm : 12.75  
Tolerance mm : + 0.05

Rated speed rpm : 1500  
rack travel mm : 9.00  
Tolerance mm : + 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 12.75  
Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.75  
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 360  
rack travel mm : 11.85  
Tolerance mm : + 0.10

Pressure hPa : 400

rack travel mm : 12.25  
Tolerance mm : + 0.05

#### START CUT-OUT

Rated speed rpm : < 270  
Check speed 1/min : < 290

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900  
Rated speed rpm : 1500  
Del. quantity cm<sup>3</sup>/1000 strokes : 121.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + 6.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 129.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 5.0

#### BREAKAWAY

Rack travel in mm : 11.70  
Rated speed rpm : 1545  
Tolerance 1/min : + 5

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 7.40  
Tolerance mm : + 0.20  
Del. quantity cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0



## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.01.94  
Test oil : ISO 4113

Combination No. : 0402646624

Injection pump  
Pump designation : PE6P120A320RS7299  
EP type number : 0412626885

Governor  
Governor design. : RQV275...1000PA1075K  
Governor no. : 0421815356

Cust. part No. : 1280155

### Customer-spec. information

Customer : DAF  
Motor : WS 295 M  
Power KW : 295.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.85  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 14.35  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 279.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 \_\_\_\_\_  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 \_\_\_\_\_  
 2nd speed rpm : 275  
 \_\_\_\_\_  
 Rack travel in mm : 5.60  
 Tolerance mm : + 0.20  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 2.14  
 Tolerance mm : + 0.15  
 \_\_\_\_\_  
 Rated speed rpm : 1046  
 guide sleeve  
 travel mm : 9.83  
 Tolerance mm : + 0.20  
 \_\_\_\_\_  
 Rated speed rpm : 689  
 guide sleeve  
 travel mm : 6.43  
 Tolerance mm : + 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 284  
 guide sleeve  
 travel mm : 2.27  
 Tolerance mm : + 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 334  
 guide sleeve  
 travel mm : 3.17  
 Tolerance mm : + 0.25

Rated speed rpm : 390  
 guide sleeve  
 travel mm : 3.79  
 Tolerance mm : + 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 1310  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1135  
 \_\_\_\_\_  
 Rack travel in mm : 13.60  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 279.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 121.0  
 tolerance degree : + 4.0  
 \_\_\_\_\_  
 rack travel mm : 13.40  
 Rated speed rpm : 1033  
 Tolerance 1/min : + 5  
 \_\_\_\_\_  
 rack travel mm : 4.00  
 Rated speed rpm : 1160  
 Tolerance 1/min : + 15  
 \_\_\_\_\_  
 rack travel mm : 0.70  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1275

---

#### LOW IDLE

control lever  
position degree : 77.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : 4.80  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 355  
Tolerance 1/min : + - 30

Rated speed rpm : 175  
CRT mm min. : > 7.80

---

#### TORQUE CONTROL

Rated speed rpm : 980  
rack travel mm : 14.35  
Tolerance mm : + - 0.05

Rated speed rpm : 750  
rack travel mm : 13.55  
Tolerance mm : + - 0.05

Rated speed rpm : 600  
rack travel mm : 12.70  
Tolerance mm : + - 0.10

Rated speed rpm : 500  
rack travel mm : 12.50  
Tolerance mm : + - 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 980  
Pressure hPa : 1500  
rack travel mm : 14.35  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : 840  
Rated speed rpm : 980  
rack travel mm : 13.25  
Tolerance mm : + - 0.05

Rated speed rpm : 980  
Pressure hPa : -  
rack travel mm : 9.00  
Tolerance mm : + - 0.10

Pressure hPa : 430  
rack travel mm : 10.50  
Tolerance mm : + - 0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 284.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 172.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

#### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1033  
Tolerance 1/min : + - 5

---

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : 5.60  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +-- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +-- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.01.94  
Test oil : ISO 4113

Combination No. : 0402646786

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQV300...1050PA1065  
Governor no. : 0421814053

Cust. part No. : 0240747802

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-  
: 1

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.00  
 Tolerance mm :  $\pm$  0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 5.20  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve travel mm : 1.13  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 1108  
 guide sleeve travel mm : 9.81  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 370  
 guide sleeve travel mm : 2.00  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 420

guide sleeve travel mm : 2.49  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 750  
 guide sleeve travel mm : 4.87  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 1310  
 guide sleeve travel mm : 13.50  
 Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1170  
 Rack travel in mm : 11.70  
 Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever position degree : 105.0  
 tolerance degree :  $\pm$  4.0  
 rack travel mm : 11.70  
 Rated speed rpm : 1095  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : 4.00  
 Rated speed rpm : 1160  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : 0.75

Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1300

#### LOW IDLE

control lever position degree : 69.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. : > 7.50

Rated speed rpm : 350

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 400  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 700  
Pressure hPa : 1000  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : 550  
Rated speed rpm : 400  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700

Pressure hPa : -

rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 300  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.10

#### START CUT-OUT

Rated speed rpm : < 220  
Check speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
Rated speed rpm : 1050  
Del. quantity cm<sup>3</sup>/1000 strokes : 228.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : 550  
Rated speed rpm : 400  
Del. quantity cm<sup>3</sup>/1000 strokes : 191.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### BREAKAWAY

Rack travel in mm : 11.70  
Rated speed rpm : 1095  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.75  
Tolerance mm : + - 0.25  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.01.94  
Test oil : ISO 4113

Combination No. : 0402646976

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQ300/1050PA1031  
Governor no. : 0421801642

Cust. part No. : 0230740902

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05  
test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm	:	13.00
Tolerance mm	:	+ - 0.05
<hr/>		
Del. quantity cm <sup>3</sup> /1000 strokes	:	231.0
<hr/>		
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 1.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 4.0
<hr/>		
Spred		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	5.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	9.0
<hr/>		
2nd speed rpm	:	300
<hr/>		
Rack travel in mm	:	5.20
Tolerance mm	:	+ - 0.30
Del. quantity cm <sup>3</sup> /1000 strokes	:	13.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 3.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 6.0
Spred		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance cm <sup>3</sup> /1000S.	:	10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	:	300
guide sleeve travel mm	:	1.82
Tolerance mm	:	+ - 0.10
<hr/>		
Rated speed rpm	:	1103
guide sleeve travel mm	:	6.70
Tolerance mm	:	+ - 0.10
<hr/>		
Rated speed rpm	:	1050
guide sleeve travel mm	:	6.35
Tolerance mm	:	+ - 0.10
<hr/>		
Rated speed rpm	:	811

guide sleeve travel mm	:	6.09
Tolerance mm	:	+ - 0.10
<hr/>		
Rated speed rpm	:	427
guide sleeve travel mm	:	4.96
Tolerance mm	:	+ - 0.10
<hr/>		
Rated speed rpm	:	510
guide sleeve travel mm	:	6.00
Tolerance mm	:	+ - 0.10
<hr/>		
Rated speed rpm	:	1270
guide sleeve travel mm	:	11.50
Tolerance mm	:	+ - 0.50
<hr/>		
Rated speed rpm	:	873
guide sleeve travel mm	:	6.26
Tolerance mm	:	+ - 0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm	:	600
Rack travel in mm	:	20.00
Tolerance mm	:	+ - 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	700
Aneroid pressure		
hPa	:	1000
Del. quantity cm <sup>3</sup> /1000 strokes	:	231.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 4.0
Spred		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0

---

##### RATED SPEED

control lever position degree	:	97.0
tolerance degree	:	+ - 4.0
<hr/>		
rack travel mm	:	11.70
Rated speed rpm	:	1098

Tolerance 1/min	: + -	8
rack travel mm	:	4.00
Rated speed rpm	:	1180
Tolerance 1/min	: + -	15
rack travel mm	:	0.75
Tolerance mm	: + -	0.75
Rated speed rpm	:	1300

---

#### LOW IDLE

control lever position degree	:	74.0
tolerance degree	: + -	4.0

#### Testing:

Rated speed rpm	:	300
rack travel mm	:	5.20
Tolerance mm	: + -	0.10
rack travel mm	:	2.00
Rated speed rpm	:	400
Tolerance 1/min	: + -	20
Rated speed rpm	:	200
CRT mm min.	: >	7.10

---

#### TORQUE CONTROL

Rated speed rpm	:	700
rack travel mm	:	13.00
Tolerance mm	: + -	0.05
Rated speed rpm	:	1050
rack travel mm	:	13.00
Tolerance mm	: + -	0.10
Rated speed rpm	:	400
rack travel mm	:	12.25
Tolerance mm	: + -	0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm	:	400
Pressure hPa	:	1000
rack travel mm	:	13.00
Tolerance mm	: + -	0.05

#### MEASUREMENT

Pressure hPa	:	550
Rated speed rpm	:	400
rack travel mm	:	12.25
Tolerance mm	: + -	0.05

Rated speed rpm : 400

Pressure hPa	:	-
rack travel mm	:	10.35
Tolerance mm	: + -	0.15

Pressure hPa	:	300
rack travel mm	:	11.00
Tolerance mm	: + -	0.10

---

#### START CUT-OUT

Rated speed rpm	: <	220
Check speed 1/min	: <	240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	1000
Rated speed rpm	:	1050
Del. quantity cm <sup>3</sup> /1000 strokes	:	228.0
Tolerance cm <sup>3</sup> /1000 strokes	: + -	2.0
Check tolerance cm <sup>3</sup> /1000S.	: + -	5.0
Spread		
Tolerance cm <sup>3</sup> /1000 strokes	:	8.0
Check tolerance cm <sup>3</sup> /1000S.	:	12.0
Aneroid pressure hPa	:	550
Rated speed rpm	:	400
Del. quantity cm <sup>3</sup> /1000 strokes	:	191.0
Tolerance cm <sup>3</sup> /1000 strokes	: + -	1.5
Check tolerance cm <sup>3</sup> /1000S.	: + -	4.5

Aneroid pressure hPa	:	-
Rated speed rpm	:	500
Del. quantity cm <sup>3</sup> /1000 strokes	:	132.0
Tolerance cm <sup>3</sup> /1000 strokes	: + -	1.0
Check tolerance cm <sup>3</sup> /1000S.	: + -	4.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 11.70  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : + 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.94  
Test oil : ISO 4113

Combination No. : 0403456126

Injection pump  
Pump designation : PES6MW100/321RS1201  
EP type number : 0413406190

Governor  
Governor design. : RQV250...1200MW83-4  
Governor no. : 0420083307

Cust. part No. : 3-7332

Customer-spec. information  
Customer : MAN  
Motor : D 0826 LFL06  
Power KW : 162.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1  
S.o.d. blocking  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 800

Rack travel in mm : 12.70  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 18.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
 guide sleeve  
 travel mm : 1.13  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1250  
 guide sleeve  
 travel mm : 10.44  
 Tolerance mm : + 0.25  
 Rated speed rpm : 807  
 guide sleeve  
 travel mm : 5.83  
 Tolerance mm : + 0.25  
 Rated speed rpm : 333  
 guide sleeve  
 travel mm : 2.03  
 Tolerance mm : + 0.25  
 Rated speed rpm : 383  
 guide sleeve  
 travel mm : 2.62  
 Tolerance mm : + 0.25  
 Rated speed rpm : 440  
 guide sleeve  
 travel mm : 3.12

Tolerance mm : + 0.25  
 Rated speed rpm : 1460  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : VL  
 Rated speed rpm : 1300  
 Rack travel in mm : 11.50  
 Tolerance mm : + 0.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 140.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever  
 position degree : 122.0  
 tolerance degree : + 4.0  
 rack travel mm : 11.20  
 Rated speed rpm : 1253  
 Tolerance 1/min : + 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1335  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 77.0  
tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 360  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 150  
CRT mm min. : > 7.00

TORQUE CONTROL

Rated speed rpm : 800  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1200  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1000  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Pressure hPa : 550

rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.15  
Pressure hPa : 155  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

BREAKAWAY

Rack travel in mm : 11.20  
Rated speed rpm : 1253  
Tolerance 1/min : + - 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 13.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.01.94  
Test oil : ISO 4113

Combination No. : 0403456127

Injection pump  
Pump designation : PES6MW100/321RS1201  
EP type number : 0413406190

Governor  
Governor design. : RQ250/1200MW84-15  
Governor no. : 0420082072

Cust. part No. : 3-7331

---

Customer-spec. information  
Customer : MAN  
Motor : D 0826 LFL06  
Power KW : 162.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

---

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

---

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1  
S.o.d. blocking  
Barrel no. : 1

---

### BASIC SETTING

Rated speed rpm : 800

Rack travel in mm : 12.70  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0

Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
Spred Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance cm <sup>3</sup> /1000S.	: 7.5
Del. quantity cm <sup>3</sup> /1000 strokes	: 18.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 2.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.5
Spred Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	: 250
guide sleeve travel mm	: 1.53
Tolerance mm	: + 0.10
Rated speed rpm	: 1262
guide sleeve travel mm	: 7.61
Tolerance mm	: + 0.10
Rated speed rpm	: 1200
guide sleeve travel mm	: 7.30
Tolerance mm	: + 0.10
Rated speed rpm	: 914
guide sleeve travel mm	: 7.08
Tolerance mm	: + 0.10
Rated speed rpm	: 364
guide sleeve travel mm	: 3.68
Tolerance mm	: + 0.10
Rated speed rpm	: 530
guide sleeve travel mm	: 7.00

Tolerance mm	: + 0.10
Rated speed rpm	: 1380
guide sleeve travel mm	: 11.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1061
guide sleeve travel mm	: 7.23
Tolerance mm	: + 0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm	: 600
Rack travel in mm	: 16.50
Tolerance mm	: + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 800
Aneroid pressure hPa	: 1000
Del. quantity cm <sup>3</sup> /1000 strokes	: 140.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
Spred Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance cm <sup>3</sup> /1000S.	: 7.5

##### RATED SPEED

control lever position degree	: 102.0
tolerance degree	: + 4.0
rack travel mm	: 11.20
Rated speed rpm	: 1253
Tolerance 1/min	: + 8
rack travel mm	: 4.00
Rated speed rpm	: 1335
Tolerance 1/min	: + 15
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1400

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 5.70  
Tolerance mm : + - 0.10

Rated speed rpm : 150  
CRT mm min. : > 7.00

TORQUE CONTROL

Rated speed rpm : 800  
rack travel mm : 12.70  
Tolerance mm : + - 0.05

Rated speed rpm : 1200  
rack travel mm : 12.20  
Tolerance mm : + - 0.10

Rated speed rpm : 600  
rack travel mm : 12.70  
Tolerance mm : + - 0.10

Rated speed rpm : 1000  
rack travel mm : 12.40  
Tolerance mm : + - 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 12.70  
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.00  
Tolerance mm : + - 0.05

Rated speed rpm : 500

Pressure hPa : 550  
rack travel mm : 12.15  
Tolerance mm : + - 0.15

Pressure hPa : 155  
rack travel mm : 10.35  
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

BREAKAWAY

Rack travel in mm : 11.20  
Rated speed rpm : 1253  
Tolerance 1/min : + - 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 13.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.03.94  
Test oil : ISO 4113

Combination No. : 0401849755

Injection pump  
Pump designation : PE10P110A920/5LS3164  
EP type number : 0411819708

Governor  
Governor design. : RQV300...1150PA549

Governor no. : 0421814029

Cust. part No. :

## Customer-spec. information

Customer : KHD  
Motor : BF10L513  
Power KW : 278.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 2.85  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1-10- 9- 4- 3- 6  
: - 5- 8- 7- 2

Phasing : 0-27-72-99-144-171  
: -216-243-288-315

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.75  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 142.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 15.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1290

Rack travel in mm : 9.70  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 142.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever  
 position degree : 55.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 123.0  
 tolerance degree : + - 4.0  
 rack travel mm : 10.70  
 Rated speed rpm : 1195  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1300  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1450

##### LOW IDLE

control lever  
 position degree : 90.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 19.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 300  
 rack travel mm : 7.00  
 Tolerance mm : + - 0.10

Rated speed rpm : 200

CRT mm min. : > 10.10

Rated speed rpm : 385

##### TORQUE CONTROL

Rated speed rpm : 800  
 rack travel mm : 11.75  
 Tolerance mm : + - 0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### MEASUREMENT

Pressure hPa : 420  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 450  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.05

---

### START CUT-OUT

Rated speed rpm : < 220  
Check speed 1/min : < 240

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Rated speed rpm : 450  
Del. quantity cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

### BREAKAWAY

Rack travel in mm : 10.70  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

---

### LOW IDLE

Del. quantity cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance cm<sup>3</sup>/1000S. : 7.5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.03.94  
Test oil : ISO 4113

Combination No. : 0402046829

Injection pump  
Pump designation : PES6P120A320RS3284  
EP type number : 0412026749

Governor  
Governor design. : RQV275...1050PA995  
: -1  
Governor no. : 0421813941

Cust. part No. : CCEP 5120A

### Customer-spec. information

Customer : RVI  
Motor : MIDR 062045 B/3  
Power KW : 186.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0  
x inside diameter : 2.5  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.55  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 151.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 275  
 Rack travel in mm : -5.10  
 Tolerance mm : + - 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 24.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 5.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1220  
 Rack travel in mm : 10.50  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 151.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread

Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 300.0  
 tolerance degree : + - 4.0  
 rack travel mm : -1.00  
 Rated speed rpm : 1130  
 Tolerance 1/min : + - 5  
 rack travel mm : -6.50  
 Rated speed rpm : 1225  
 Tolerance 1/min : + - 15  
 rack travel mm : -10.05  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1350

##### LOW IDLE

control lever  
 position degree : 247.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 275  
 rack travel mm : -5.10  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 200  
 CRT mm max. : < -3.70  
 Rated speed rpm : 390

##### TORQUE CONTROL

Rated speed rpm : 1050  
 Tolerance mm : + - 0.10

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1000

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -1.35  
Tolerance mm : + - 0.15

Rated speed rpm : 500

Pressure hPa : 130  
rack travel mm : -1.00  
Tolerance mm : + - 0.10

Pressure hPa : 240  
rack travel mm : -0.35  
Tolerance mm : + - 0.05

#### START CUT-OUT

Rated speed rpm : < 210  
Check speed 1/min : < 230

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 149.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1130  
Tolerance 1/min : + - 5

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 19.0

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : -5.10  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.02.94  
Test oil : ISO 4113

Combination No. : 0402046856

Injection pump  
Pump designation : PE6P110A320RS3329Z  
EP type number : 0412016744

Governor  
Governor design. : RQV325...1300PA1119  
Governor no. : 0421814083

Cust. part No. : 1284417/3

### Customer-spec. information

Customer : DAF  
Motor : NS133M  
Power KW : 133.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.85  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 146.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5  
 2nd speed rpm : 325  
 Rack travel in mm : 5.20  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 26.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
 guide sleeve  
 travel mm : 1.33  
 Tolerance mm : + 0.15

Rated speed rpm : 1353  
 guide sleeve  
 travel mm : 8.29  
 Tolerance mm : + 0.20

Rated speed rpm : 900  
 guide sleeve  
 travel mm : 4.92  
 Tolerance mm : + 0.25

Rated speed rpm : 405  
 guide sleeve  
 travel mm : 2.07  
 Tolerance mm : + 0.25

Rated speed rpm : 455  
 guide sleeve  
 travel mm : 2.52  
 Tolerance mm : + 0.25

Rated speed rpm : 530  
 guide sleeve  
 travel mm : 2.93  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1640  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1450

Rack travel in mm : 10.80  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 146.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever  
 position degree : 122.0  
 tolerance degree : + 4.0

rack travel mm : 10.85  
 Rated speed rpm : 1345  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1460  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1600

---

## LOW IDLE

control lever  
position degree : 83.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 325  
rack travel mm : 4.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 225

CRT mm min. : > 6.00

Rated speed rpm : 375

---

## TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1300  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : 310  
Rated speed rpm : 600  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600

Pressure hPa : 130  
rack travel mm : 7.85  
Tolerance mm :  $\pm$  0.10

---

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 88.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5

---

## BREAKAWAY

Rack travel in mm : 10.85  
Rated speed rpm : 1345  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 6.60  
Tolerance mm :  $\pm$  0.10  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

## LOW IDLE

Rated speed rpm : 325  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5



## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.94  
Test oil : ISO 4113

Combination No. : 0402646612

Injection pump  
Pump designation : PE6P120A320RS7248  
: -10X  
EP type number : 0412626907

Governor  
Governor design. : RQ275/1150PA987  
Governor no. : 0421801578

Cust. part No. : 1278688

### Customer-spec. information

Customer : DAF  
Motor : RS 200 M  
Power KW : 200.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 11.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance check  
tolerance °NW : + 0.30  
: + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.75  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 172.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 \_\_\_\_\_  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 \_\_\_\_\_  
 2nd speed rpm : 275  
 \_\_\_\_\_  
 Rack travel in mm : 5.40  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 1.92  
 Tolerance mm : + 0.10  
 \_\_\_\_\_  
 Rated speed rpm : 1206  
 guide sleeve  
 travel mm : 6.49  
 Tolerance mm : + 0.10  
 \_\_\_\_\_  
 Rated speed rpm : 1150  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10  
 \_\_\_\_\_  
 Rated speed rpm : 351  
 guide sleeve  
 travel mm : 4.25  
 Tolerance mm : + 0.10  
 \_\_\_\_\_  
 Rated speed rpm : 440  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10

Rated speed rpm : 1360  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 550  
 \_\_\_\_\_  
 Rack travel in mm : 15.80  
 Tolerance mm : + 0.60

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 172.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 102.0  
 tolerance degree : + 4.0  
 \_\_\_\_\_  
 rack travel mm : 10.70  
 Rated speed rpm : 1193  
 Tolerance 1/min : + 8  
 \_\_\_\_\_  
 rack travel mm : 4.00  
 Rated speed rpm : 1270  
 Tolerance 1/min : + 15  
 \_\_\_\_\_  
 rack travel mm : 0.70  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1450

##### LOW IDLE

control lever  
 position degree : 74.0

tolerance degree : + - 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : 4.90  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min : + - 20

Rated speed rpm : 175

CRT mm min. : > 7.00

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.75  
Tolerance mm : + - 0.05

Rated speed rpm : 1150  
rack travel mm : 11.70  
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 11.75  
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : 340  
Rated speed rpm : 600  
rack travel mm : 11.25  
Tolerance mm : + - 0.05

Rated speed rpm : 600

Pressure hPa : -  
rack travel mm : 9.50  
Tolerance mm : + - 0.10

Pressure hPa : 200  
rack travel mm : 10.20  
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Del. quantity

cm<sup>3</sup>/1000 strokes : 121.5

Tolerance

cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance

cm<sup>3</sup>/1000S. : + - 4.0

BREAKAWAY

Rack travel in mm : 10.70

Rated speed rpm : 1193

Tolerance 1/min : + - 8

LOW IDLE

Rated speed rpm : 275

rack travel mm : 5.40

Tolerance mm : + - 0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 16.0

Tolerance

cm<sup>3</sup>/1000 strokes : + - 3.0

Check tolerance

cm<sup>3</sup>/1000S. : + - 6.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance

cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.94  
Test oil : ISO 4113

Combination No. : 0402646613

Injection pump  
Pump designation : PE6P120A320RS7248  
: -10W  
EP type number : 0412626908

Governor  
Governor design. : RQ275/1150PA987  
Governor no. : 0421801578

Cust. part No. : 1278684/3

## Customer-spec. information

Customer : DAF  
Motor : RS 180 M  
Power KW : 180.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.75  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 154.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 275  
 Rack travel in mm : 5.40  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 1.95  
 Tolerance mm : + 0.10  
 Rated speed rpm : 1205  
 guide sleeve  
 travel mm : 6.51  
 Tolerance mm : + 0.10  
 Rated speed rpm : 1150  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10  
 Rated speed rpm : 351  
 guide sleeve  
 travel mm : 4.27  
 Tolerance mm : + 0.10  
 Rated speed rpm : 440  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10

Rated speed rpm : 1360  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 550  
 Rack travel in mm : 15.80  
 Tolerance mm : + 0.60

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 154.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 99.0  
 tolerance degree : + 4.0  
 rack travel mm : 9.70  
 Rated speed rpm : 1193  
 Tolerance 1/min : + 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1265  
 Tolerance 1/min : + 15  
 rack travel mm : 0.70  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1450

##### LOW IDLE

control lever  
 position degree : 74.0

tolerance degree : + - 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : 4.90  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min : + - 20

Rated speed rpm : 175

CRT mm min. : > 7.00

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 10.75  
Tolerance mm : + - 0.05

Rated speed rpm : 1150  
rack travel mm : 10.70  
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 10.75  
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : 300  
Rated speed rpm : 600  
rack travel mm : 10.45  
Tolerance mm : + - 0.05

Rated speed rpm : 600

Pressure hPa : -  
rack travel mm : 9.50  
Tolerance mm : + - 0.10

Pressure hPa : 240  
rack travel mm : 10.00  
Tolerance mm : + - 0.10

Aneroid pressure

hPa : -  
Del. quantity cm<sup>3</sup>/1000 strokes : 122.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

BREAKAWAY

Rack travel in mm : 9.70  
Rated speed rpm : 1193  
Tolerance 1/min : + - 8

LOW IDLE

Rated speed rpm : 275  
rack travel mm : 5.40  
Tolerance mm : + - 0.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

FUEL DELIVERY CHARACTERISTICS

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.94  
Test oil : ISO 4113

Combination No. : 0402646614

Injection pump  
Pump designation : PE6P120A320RS7248  
: -10W  
EP type number : 0412626908

Governor  
Governor design. : RQV275...1150PA986  
Governor no. : 0421813920

Cust. part No. : 1280139/3

### Customer-spec. information

Customer : DAF  
Motor : RS 180 M  
Power KW : 180.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 130  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.75  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 154.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 275  
 Rack travel in mm : 5.40  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 1.44  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1206  
 guide sleeve  
 travel mm : 8.24  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 799  
 guide sleeve  
 travel mm : 5.21  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 315  
 guide sleeve  
 travel mm : 1.98  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 365

guide sleeve  
 travel mm : 2.52  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 450  
 guide sleeve  
 travel mm : 3.07  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1500  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1350  
 Rack travel in mm : 9.70  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 154.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : + 118.0  
 tolerance degree : + - 4.0  
 rack travel mm : 9.70  
 Rated speed rpm : 1193  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1290  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.70  
 Tolerance mm : + - 0.70

Rated speed rpm : 1450

Tolerance mm : + - 0.10

#### LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : 4.90  
Tolerance mm : + - 0.10

Rated speed rpm : 175

CRT mm min. : > 7.40

Rated speed rpm : 340

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 10.75  
Tolerance mm : + - 0.05

Rated speed rpm : 1150  
rack travel mm : 10.70  
Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 10.75  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : 300  
Rated speed rpm : 600  
rack travel mm : 10.45  
Tolerance mm : + - 0.05

Rated speed rpm : 600

Pressure hPa : -  
rack travel mm : 9.50  
Tolerance mm : + - 0.10

Pressure hPa : 240  
rack travel mm : 10.00

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

#### BREAKAWAY

Rack travel in mm : 9.70  
Rated speed rpm : 1193  
Tolerance 1/min : + - 5

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : 5.40  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.94  
Test oil : ISO 4113

Combination No. : 0402646615

Injection pump  
Pump designation : PE6P120A320RS7248  
EP type number : -10X  
EP type number : 0412626907

Governor  
Governor design. : RQV275...1150PA986  
Governor no. : 0421813920

Cust. part No. : 1280141

## Customer-spec. information

Customer : DAF  
Motor : RS 200 M  
Power KW : 200.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 130  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 11.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.75  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 172.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 275  
 Rack travel in mm : 5.40  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 1.44  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1206  
 guide sleeve  
 travel mm : 8.24  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 799  
 guide sleeve  
 travel mm : 5.21  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 315  
 guide sleeve  
 travel mm : 1.98  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 365

guide sleeve  
 travel mm : 2.52  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 450  
 guide sleeve  
 travel mm : 3.07  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1500  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1335  
 Rack travel in mm : 10.30  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 172.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 119.0  
 tolerance degree : + - 4.0  
 rack travel mm : 10.70  
 Rated speed rpm : 1195  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1305  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.70  
 Tolerance mm : + - 0.70

Rated speed rpm : 1450

Tolerance mm :  $\pm$  0.10

#### LOW IDLE

control lever  
position degree : 82.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : 4.90  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 175

CRT mm min. : > 7.40

Rated speed rpm : 368

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1150  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : 340  
Rated speed rpm : 600  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600

Pressure hPa : -  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 200  
rack travel mm : 10.20

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### BREAKAWAY

Rack travel in mm : 10.70  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : 5.40  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

**BOSCH INJ. PUMP TEST SPECIFICATIONS****Note remarks**

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.12.93  
Test oil : ISO 4113

Combination No. : 0402646968

**Injection pump**  
Pump designation : PE6P120A320RS7248  
EP type number : -10  
: 0412626900

**Governor**  
Governor design. : RQV275...1150PA986  
Governor no. : 0421813920

Cust. part No. : 1248033

**Customer-spec. information**

Customer : DAF  
Motor : RS 222 L  
Power KW : 222.0

**TEST BENCH REQUIREMENTS**

Test oil inlet temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity min. l/h : 130  
Tolerance l/h : + 10.0

Test nozzle holder assembly : 1688901105

Opening pressure bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 12.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check tolerance °NW : + 0.75

**BEGINNING OF DELIVERY DIFFERENCE**

Time to cyl. no. : 1

**BASIC SETTING**

Rated speed rpm : 1000

Rack travel in mm : 12.25  
Tolerance mm : + 0.05

Del. quantity cm<sup>3</sup>/1000 strokes : 187.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spred Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 275  
 Rack travel in mm : 5.40  
 Tolerance mm : + - 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
 Spred Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1325

Rack travel in mm : 11.20  
 Tolerance mm : + - 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 187.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

Spred Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### RATED SPEED

control lever position degree	:	119.0
Tolerance degree	:	+ - 4.0
rack travel mm	:	11.20
Rated speed rpm	:	1195
Tolerance 1/min	:	+ - 5
rack travel mm	:	4.00
Rated speed rpm	:	1310
Tolerance 1/min	:	+ - 15
rack travel mm	:	0.70
Tolerance mm	:	+ - 0.70
Rated speed rpm	:	1450

#### LOW IDLE

control lever position degree : 83.0  
 Tolerance degree : + - 4.0

#### Testing:

Rated speed rpm	:	275
rack travel mm	:	4.70
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	175
CRT mm min.	:	> 6.70
Rated speed rpm	:	340

#### TORQUE CONTROL

Rated speed rpm	:	1000
rack travel mm	:	12.25
Tolerance mm	:	+ - 0.05
Rated speed rpm	:	1150
rack travel mm	:	12.20
Tolerance mm	:	+ - 0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 12.25  
Tolerance mm : + - 0.05

### MEASUREMENT

Pressure hPa : 420  
Rated speed rpm : 600  
rack travel mm : 11.65  
Tolerance mm : + - 0.05

Rated speed rpm : 600

Pressure hPa : -  
rack travel mm : 9.40  
Tolerance mm : + - 0.10

Pressure hPa : 240  
rack travel mm : 10.40  
Tolerance mm : + - 0.10

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

### BREAKAWAY

Rack travel in mm : 11.20  
Rated speed rpm : 1195  
Tolerance 1/min : + - 5

---

### LOW IDLE

Rated speed rpm : 275  
rack travel mm : 5.40

Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.03.94  
Test oil : ISO 4113

Combination No. : 0402746931

Injection pump  
Pump designation : PES6P120A320RS7236  
EP type number : 0412726848

Governor  
Governor design. : RQV275...1000PA1001  
: -2  
Governor no. : 0421813989

Cust. part No. : CCEP5128A

### Customer-spec. information

Customer : RVI  
Motor : MIDR 063540 N/3  
Power KW : 283.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413071

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0  
x inside diameter : 2.5  
x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0

Prestroke mm : 4.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 19.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.25  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 286.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : -8.10  
 Tolerance mm : + - 0.20

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1190  
 Rack travel in mm : 13.20  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 286.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 301.0  
 tolerance degree : + - 4.0  
 rack travel mm : -1.00  
 Rated speed rpm : 1070  
 Tolerance 1/min : + - 5  
 rack travel mm : -9.20  
 Rated speed rpm : 1205  
 Tolerance 1/min : + - 15  
 rack travel mm : -12.75  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1350

##### LOW IDLE

control lever  
 position degree : 247.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 300  
 rack travel mm : -8.10  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 200  
 CRT mm max. : < -6.70  
 Rated speed rpm : 365

##### TORQUE CONTROL

Rated speed rpm : 1000  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 600  
 rack travel mm : -4.50  
 Tolerance mm : + - 0.10

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1000

##### MEASUREMENT

Pressure hPa : -

Rated speed rpm : 500  
rack travel mm : -3.70  
Tolerance mm : + 0.30

Rated speed rpm : 500  
Pressure hPa : 240  
rack travel mm : -2.90  
Tolerance mm : + 0.20

Pressure hPa : 480  
rack travel mm : -1.05  
Tolerance mm : + 0.05

---

#### START CUT-OUT

Rated speed rpm : < 195  
Check speed 1/min : < 215

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 168.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : -8.10  
Tolerance mm : + 0.20

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.02.94  
Test oil : ISO 4113

Combination No. : 0402010700

Injection pump  
Pump designation : PES12P120A900RS3332  
EP type number : 0412020700

Governor  
Governor design. :  
Governor no. :

Cust. part No. :

---

Customer-spec. information  
Customer : FINCANTIERI  
Motor : V 1312 T3

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1-12- 9- 4- 5  
: - 8- 11- 2- 3  
: - 10- 7- 6

Phasing : 0-45-60-105-120  
: -165-180-225-240  
: -285-300-345

Tolerance  
Check  
tolerance °NW : + 0.50  
: + 0.75

### BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 15.35  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 288.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 8.10  
Tolerance mm : + - 0.20

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 288.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

TORQUE CONTROL

Rated speed rpm : 750  
rack travel mm : 15.35  
Tolerance mm : + - 0.05

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 8.10  
Tolerance mm : + - 0.20

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.02.94  
Test oil : ISO 4113

Combination No. : 0402018702

Injection pump  
Pump designation : PES8P120A300RS3333  
EP type number : 0412028708

Governor  
Governor design. :  
Governor no. :

Cust. part No. :

---

Customer-spec. information  
Customer : FINCANTIERI  
Motor : 1308 V

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

---

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 2- 7- 8- 4  
: - 5- 6- 3

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance  
Check  
tolerance °NW : + 0.50

### BASIC SETTING

Rated speed rpm : 750

---

Rack travel in mm : 15.35  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 288.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 8.10  
Tolerance mm : + - 0.20

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750

Aneroid pressure hPa : -

Del. quantity cm<sup>3</sup>/1000 strokes : 288.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

Spred Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

TORQUE CONTROL

Rated speed rpm : 750

rack travel mm : 15.35

Tolerance mm : + - 0.05

LOW IDLE

Rated speed rpm : 350

rack travel mm : 8.10

Tolerance mm : + - 0.20

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.03.94  
Test oil : ISO 4113

Combination No. : 0402046344

Injection pump  
Pump designation : PES6P120A320RS3277  
EP type number : 0412026747

Governor  
Governor design. : RQV275...1050PA995  
Governor no. : 0421813929

Cust. part No. : CCEP 5110A

### Customer-spec. information

Customer : RVI  
Motor : MIDR 06 20 45  
Power KW : 222.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413071

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav.  
mm : 10.50  
Tolerance mm : + 0.50

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 650

Rack travel in mm : 9.85  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 188.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 275  
 Rack travel in mm : -4.10  
 Tolerance mm : + 0.20  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 24.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1125  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 188.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

G01

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 300.0  
 tolerance degree : + 4.0  
 rack travel mm : -1.00  
 Rated speed rpm : 1140  
 Tolerance 1/min : + 5  
 rack travel mm : -5.80  
 Rated speed rpm : 1220  
 Tolerance 1/min : + 15  
 rack travel mm : -9.35  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1350

##### LOW IDLE

control lever  
 position degree : 248.0  
 tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 275  
 rack travel mm : -4.10  
 Tolerance mm : + 0.10  
 Rated speed rpm : 200  
 CRT mm max. : < -2.40  
 Rated speed rpm : 370

##### TORQUE CONTROL

Rated speed rpm : 1050  
 Tolerance mm : + 0.10

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500

Pressure hPa : 1000

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -1.90  
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 200  
rack travel mm : -1.30  
Tolerance mm : + - 0.10

Pressure hPa : 360  
rack travel mm : -0.45  
Tolerance mm : + - 0.05

#### START CUT-OUT

Rated speed rpm : < 195  
Check speed 1/min : < 215

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1140  
Tolerance 1/min : + - 5

#### STARTING FUEL DELIVERY

G02

Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 19.0

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : -4.10  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.03.94  
Test oil : ISO 4113

Combination No. : 0402746908

Injection pump  
Pump designation : PES6P120A320RS7232  
EP type number : 0412726846

Governor  
Governor design. : RQV275...1000PA1001  
Governor no. : 0421813931

Cust. part No. : CCEP 5111A

### Customer-spec. information

Customer : RVI  
Motor : MIDR 062045 E/3  
Power KW : 249.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : + 40  
Tolerance °C : + 2.0

Overflow valve : 2417413071

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.70  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 19.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance Check  
tolerance °NW : + 0.30

tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.75  
Tolerance mm : + 0.05

Del. quantity cm<sup>3</sup>/1000 strokes : 265.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 275  
 Rack travel in mm : -8.20  
 Tolerance mm : + - 0.20  
 Del. quantity cm<sup>3</sup>/1000 strokes : 31.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 5.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve travel mm : 1.30  
 Tolerance mm : + - 0.20  
 Rated speed rpm : 1070  
 guide sleeve travel mm : 8.30  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 850  
 guide sleeve travel mm : 6.60  
 Tolerance mm : + - 0.20  
 Rated speed rpm : 500  
 guide sleeve travel mm : 3.90  
 Tolerance mm : + - 0.30

Rated speed rpm : 1400  
 guide sleeve travel mm : 11.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1165  
 Rack travel in mm : 13.60  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 265.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever position degree : 302.0  
 tolerance degree : + - 4.0  
 rack travel mm : -1.00  
 Rated speed rpm : 1080  
 Tolerance 1/min : + - 5  
 rack travel mm : -9.70  
 Rated speed rpm : 1225  
 Tolerance 1/min : + - 15  
 rack travel mm : -13.25  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1300

##### LOW IDLE

control lever position degree : 247.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : -8.20  
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm max. : < -6.70

Rated speed rpm : 370

---

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000  
Tolerance mm : + 0.10

Rated speed rpm : 500  
rack travel mm : -5.50

---

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -4.20  
Tolerance mm : + 0.30

Rated speed rpm : 500

Pressure hPa : 200  
rack travel mm : -3.50  
Tolerance mm : + 0.15

Pressure hPa : 520  
rack travel mm : -0.85  
Tolerance mm : + 0.05

---

START CUT-OUT

Rated speed rpm : < 225  
Check speed 1/min : < 245

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
Rated speed rpm : 1000  
Del. quantity cm<sup>3</sup>/1000 strokes : 244.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure hPa : 1000  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 91.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance cm<sup>3</sup>/1000S. : + 8.0  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0

---

BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1080  
Tolerance 1/min : + 5

---

STARTING FUEL DELIVERY

Del. quantity cm<sup>3</sup>/1000 strokes : 156.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance cm<sup>3</sup>/1000S. : + 19.0

---

LOW IDLE

Rated speed rpm : 275  
rack travel mm : -8.20  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.94  
Test oil : ISO 4113

Combination No. : 0403244037

Injection pump  
Pump designation : PES4MW100/720RS1519  
: -2  
EP type number : 0413204017

Governor  
Governor design. : RQV300...1300MW132  
: -6  
Governor no. : 0420083309

Cust. part No. : 0240744002

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM364LA  
Power KW : 103.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + - 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + - 1.0

Prestroke mm : 4.55  
Tolerance mm : + - 0.05

test only : + - 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : + - 0.50  
Check tolerance °NW : + - 0.75

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.90  
Tolerance mm : + - 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + - 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance cm<sup>3</sup>/1000S. : 7.5  
 Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1510

Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure hPa : 1400  
 Del. quantity cm<sup>3</sup>/1000 strokes : 126.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever position degree : 116.0  
 tolerance degree : + - 4.0  
 rack travel mm : 12.90  
 Rated speed rpm : 1345  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1450  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1550

##### LOW IDLE

control lever position degree : 71.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 300  
 rack travel mm : 3.80  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 200  
 CRT mm min. : > 4.50

##### TORQUE CONTROL

Rated speed rpm : 1300  
 rack travel mm : 13.90  
 Tolerance mm : + - 0.05  
 Rated speed rpm : 750  
 rack travel mm : 13.90  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 600  
 rack travel mm : 13.90  
 Tolerance mm : + - 0.10

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1400  
 rack travel mm : 13.90  
 Tolerance mm : + - 0.05

##### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 500  
 rack travel mm : 10.80  
 Tolerance mm : + - 0.10

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 13.10  
Tolerance mm : + - 0.10

Pressure hPa : 550  
rack travel mm : 11.60  
Tolerance mm : + - 0.10

---

#### START CUT-OUT

Rated speed rpm : < 200  
Check speed 1/min : < 220

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1400  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 124.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure hPa : 1400  
Rated speed rpm : 600  
Del. quantity cm<sup>3</sup>/1000 strokes : 128.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 5.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 67.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.0

---

Rack travel in mm : 12.90  
Rated speed rpm : 1345  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 5.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 8.0

---

#### LOW IDLE

Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance cm<sup>3</sup>/1000S. : 5.5

---

#### BREAKAWAY

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.03.94  
Test oil : ISO 4113

Combination No. : 0403246035

Injection pump  
Pump designation : PES6MW100/720RS1517  
: -3  
EP type number : 0413206020

Governor  
Governor design. : RQV300...1300MW132  
: -2  
Governor no. : 0420083293

Cust. part No. : 0240744202

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 125.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1588901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

G10

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 21.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance  
Check  
tolerance °NW : + 0.50

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.00  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 102.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread

Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0  
 Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve travel mm : 1.02  
 Tolerance mm : + - 0.25

Rated speed rpm : 1353  
 guide sleeve travel mm : 6.70  
 Tolerance mm : + - 0.25

Rated speed rpm : 1100  
 guide sleeve travel mm : 4.76  
 Tolerance mm : + - 0.25

Rated speed rpm : 490  
 guide sleeve travel mm : 2.25  
 Tolerance mm : + - 0.25

Rated speed rpm : 540  
 guide sleeve travel mm : 2.50  
 Tolerance mm : + - 0.25

Rated speed rpm : 710  
 guide sleeve travel mm : 3.03  
 Tolerance mm : + - 0.25

Rated speed rpm : 1683  
 guide sleeve travel mm : 12.00  
 Tolerance mm : + - 0.25

Rated speed rpm : 1780  
 guide sleeve travel mm : 13.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1580

Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 102.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

##### RATED SPEED

control lever position degree : 116.0  
 tolerance degree : + - 4.0

rack travel mm : 11.00  
 Rated speed rpm : 1345  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1470  
 Tolerance 1/min : + - 15

rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1550

##### LOW IDLE

control lever position degree : 71.0

tolerance degree : +  
- 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 4.10  
Tolerance mm : +  
- 0.10

Rated speed rpm : 200

CRT mm min. : > 5.00

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 12.00  
Tolerance mm : +  
- 0.05

Rated speed rpm : 750  
rack travel mm : 12.00  
Tolerance mm : +  
- 0.10

Rated speed rpm : 600  
rack travel mm : 12.00  
Tolerance mm : +  
- 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 12.00  
Tolerance mm : +  
- 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.90  
Tolerance mm : +  
- 0.10

Rated speed rpm : 500

Pressure hPa : 300  
rack travel mm : 11.35  
Tolerance mm : +  
- 0.10

Pressure hPa : 150  
rack travel mm : 10.35  
Tolerance mm : +  
- 0.10

START CUT-OUT

Rated speed rpm : < 220

Check  
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 93.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +  
- 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +  
- 4.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +  
- 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +  
- 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +  
- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +  
- 3.0

BREAKAWAY

Rack travel in mm : 11.00  
Rated speed rpm : 1345  
Tolerance 1/min : +  
- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +  
- 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +  
- 8.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.03.94  
Test oil : ISO 4113

Combination No. : 0401846529

Injection pump  
Pump designation : PE6P120A320RS3186  
EP type number : 0411826756

Governor  
Governor design. : RQV250...1025PA921  
: -4

Governor no. : 0421813787

Cust. part No. : 422719-P05

---

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : TD102F (Q)  
Power KW : 220.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413046

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

---

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 2.65  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

---

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

---

### BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread \_\_\_\_\_  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1080

Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 198.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever position degree : 62.0  
 tolerance degree : + - 4.0

control lever position degree : 117.0  
 tolerance degree : + - 4.0

rack travel mm : 10.40  
 Rated speed rpm : 1060  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1125

Tolerance 1/min : + - 15  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1250

LOW IDLE

control lever position degree : 65.0  
 tolerance degree : + - 4.0

control lever position degree : 8.0  
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 250  
 rack travel mm : 4.30  
 Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 5.70

Rated speed rpm : 300

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
 Pressure hPa : 1000  
 rack travel mm : 11.45  
 Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 500  
 rack travel mm : 8.90  
 Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : -  
 rack travel mm : 2.00  
 Tolerance mm : + - 0.10

Pressure hPa : 65  
 rack travel mm : 0.25  
 Tolerance mm : + - 0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

## BREAKAWAY

Rack travel in mm : 10.40  
Rated speed rpm : 1060  
Tolerance 1/min : + - 5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.03.94  
Test oil : ISO 4113

Combination No. : 0402016705

Injection pump  
Pump designation : PES6P120A700LS3334  
EP type number : 0412026769

Governor  
Governor design. :  
Governor no. :

Cust. part No. :

---

Customer-spec. information  
Customer : FINCANTIERI  
Motor : L 1306 T3

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 15.25  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 276.0

Tolerance  
cm³/1000 strokes : + 1.0

Check tolerance  
cm³/1000s. : + 4.0

Spread  
Tolerance  
cm³/1000 strokes : 6.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0  
2nd speed rpm : 350  
Rack travel in mm : 7.50  
Tolerance mm : + - 0.20  
Del. quantity cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance cm<sup>3</sup>/1000S. : 14.0

Del. quantity cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance cm<sup>3</sup>/1000S. : 14.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure hPa : 1300  
Del. quantity cm<sup>3</sup>/1000 strokes : 276.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 7.50  
Tolerance mm : + - 0.20

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.03.94  
Test oil : ISO 4113

Combination No. : 0402846052

Injection pump  
Pump designation : PE6P110A320RS8009-1  
EP type number : 0412816011

Governor  
Governor design. : RQV300...1100PA1017  
Governor no. : 0421813965

Cust. part No. : 110030651-P02? FAX

### Customer-spec. information

Customer : VME  
Motor : TD73KBE

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413078

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.85  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.60  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.19  
 Tolerance mm : + - 0.25

Rated speed rpm : 1157  
 guide sleeve  
 travel mm : 8.41  
 Tolerance mm : + - 0.25

Rated speed rpm : 824  
 guide sleeve  
 travel mm : 5.33  
 Tolerance mm : + - 0.25

Rated speed rpm : 385  
 guide sleeve  
 travel mm : 1.98  
 Tolerance mm : + - 0.25

Rated speed rpm : 435  
 guide sleeve  
 travel mm : 2.45  
 Tolerance mm : + - 0.25

Rated speed rpm : 530  
 guide sleeve  
 travel mm : 3.11  
 Tolerance mm : + - 0.25

Rated speed rpm : 1400  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1160

Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure hPa : 1200  
 Del. quantity cm<sup>3</sup>/1000 strokes : 147.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 40.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 106.0  
 tolerance degree : + - 4.0

rack travel mm : 8.60  
 Rated speed rpm : 1145  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1215  
 Tolerance 1/min : + - 15

rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1320

LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 8.0  
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 4.30  
 Tolerance mm : + - 0.30

Rated speed rpm : 200  
CRT mm min. : > 5.90  
Rated speed rpm : 335

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1000  
Pressure hPa : 1200  
rack travel mm : 9.60  
Tolerance mm : + - 0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : 7.70  
Tolerance mm : + - 0.10

Rated speed rpm : 1000

Pressure hPa : 480  
rack travel mm : 1.50  
Tolerance mm : + - 0.20

Pressure hPa : 270  
rack travel mm : 0.25  
Tolerance mm : + - 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 117.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

#### BREAKAWAY

Rack travel in mm : 8.60  
Rated speed rpm : 1145  
Tolerance 1/min : + - 5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.04.94  
Test oil : ISO 4113

Combination No. : 0400866177

Injection pump  
Pump designation : PES6A95D120RS2773  
EP type number : 0410896904

Governor  
Governor design. : RSV410...1050AOC2260  
: -2R  
Governor no. : 0420233342

Cust. part No. :

---

Customer-spec. information  
Customer : CUMMINS  
Motor : 6 BT  
Power KW : 150.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

Hydraulic latching of starting delivery.

Start-of-delivery mark 11.5° cam angle after start of delivery cyl. 1

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Prestroke mm : 2.15  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

°NW after s.o.d. : 11.5  
S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 11.5  
Check tolerance °NW : + 0.55

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm :	11.00
Tolerance mm :	+ - 0.05
Del. quantity cm <sup>3</sup> /1000 strokes :	97.0
Tolerance cm <sup>3</sup> /1000 strokes :	+ - 1.0
Check tolerance cm <sup>3</sup> /1000S. :	+ - 3.0
Spred	
Tolerance cm <sup>3</sup> /1000 strokes :	3.5
Check tolerance cm <sup>3</sup> /1000S. :	8.0
2nd speed rpm :	410
Rack travel in mm :	7.00
Tolerance mm :	+ - 0.10
Del. quantity cm <sup>3</sup> /1000 strokes :	16.0
Tolerance cm <sup>3</sup> /1000 strokes :	+ - 2.0
Check tolerance cm <sup>3</sup> /1000S. :	+ - 4.5
Spred	
Tolerance cm <sup>3</sup> /1000 strokes :	5.5
Check tolerance cm <sup>3</sup> /1000S. :	9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree :	- 3
Rated speed rpm :	800
Rack travel in mm :	0.50
Tolerance mm :	+ - 0.20
governor spring pre-tension click setting x :	1.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1050
Aneroid pressure hPa :	900
Del. quantity cm <sup>3</sup> /1000 strokes :	97.0
Tolerance cm <sup>3</sup> /1000 strokes :	+ - 1.0
Check tolerance cm <sup>3</sup> /1000S. :	+ - 3.0
Spred	
Tolerance cm <sup>3</sup> /1000 strokes :	3.5
Check tolerance cm <sup>3</sup> /1000S. :	8.0

##### RATED SPEED

control lever position degree :	85.0
tolerance degree :	+ - 4.0
rack travel mm :	10.00
Rated speed rpm :	1095
Tolerance 1/min :	+ - 5
rack travel mm :	4.00
Rated speed rpm :	1175
Tolerance 1/min :	+ - 15
rack travel mm :	0.85
Tolerance mm :	+ - 0.55
Rated speed rpm :	1300
rack travel mm :	4.00
Rated speed rpm :	1195

##### LOW IDLE

control lever position degree :	66.0
tolerance degree :	+ - 4.0
Setting point w/out bumper spring	
Rated speed rpm :	410
rack travel mm :	6.50
Testing:	
Rated speed rpm :	410
rack travel mm :	7.00
Tolerance mm :	+ - 0.10
rack travel mm :	2.00
Rated speed rpm :	520
Tolerance 1/min :	+ - 30

Rated speed rpm : 100  
CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.00  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 11.05  
Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 11.00  
Tolerance mm : + - 0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.50  
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 260  
rack travel mm : 9.90  
Tolerance mm : + - 0.10

Pressure hPa : 550  
rack travel mm : 10.65  
Tolerance mm : + - 0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 58.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

#### BREAKAWAY

Rack travel in mm : 10.00  
Rated speed rpm : 1095  
Tolerance 1/min : + - 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.00  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 7.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 10.0

#### LOW IDLE

Rated speed rpm : 410  
rack travel mm : 7.00  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.04.94  
Test oil : ISO 4113

Combination No. : 0403276006

Injection pump  
Pump designation : PES6MW100/720RS1517  
: -3  
EP type number : 0413206020

Governor  
Governor design. : RSV350...1200MW0A355  
: -1  
Governor no. : 0420085229

Cust. part No. : 0250740202

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 120.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + - 1.5

Test Lines : 1680750089

Outside diameter : 8.0

G25

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + - 1.0

Prestroke mm : 4.55  
Tolerance mm : + - 0.05

test only : + - 0.10

Rack travel in mm : 21.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + - 0.50  
Check tolerance °NW : + - 0.75

## BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.45  
Tolerance mm : + - 0.05

Del. quantity  
cm3/1000 strokes : 102.0

Tolerance  
cm3/1000 strokes : + - 1.0

Check tolerance  
cm3/1000s. : + - 3.0

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.5

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.65  
 Tolerance mm : + - 0.35

governor spring  
 pre-tension  
 click setting x : 4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 102.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 3.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

##### RATED SPEED

control lever  
 position degree : 96.0  
 tolerance degree : + - 4.0

rack travel mm : 10.40  
 Rated speed rpm : 1245  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1320  
 Tolerance 1/min : + - 15

rack travel mm : 1.00  
 Tolerance mm : + - 0.70  
 Rated speed rpm : 1400

---

##### LOW IDLE

control lever  
 position degree : 66.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 350  
 rack travel mm : 3.30  
 Tolerance mm : + - 0.10

rack travel mm : 2.00  
 Rated speed rpm : 100  
 CRT mm min. : > 19.00

---

##### TORQUE CONTROL

Rated speed rpm : 1200  
 rack travel mm : 11.45  
 Tolerance mm : + - 0.05

Rated speed rpm : 750  
 rack travel mm : 11.45  
 Tolerance mm : + - 0.10

---

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1000  
 rack travel mm : 11.45  
 Tolerance mm : + - 0.10

**MEASUREMENT**

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.65  
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 530  
rack travel mm : 11.00  
Tolerance mm : + - 0.10

Pressure hPa : 350  
rack travel mm : 10.00  
Tolerance mm : + - 0.10

**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 99.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 63.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

**BREAKAWAY**

Rack travel in mm : 10.40  
Rated speed rpm : 1245  
Tolerance 1/min : + - 5

**STARTING FUEL DELIVERY**

Rated speed rpm : 100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 8.0

**LOW IDLE**

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.06.94  
Test oil : ISO 4113

Combination No. : 0400846616

Injection pump  
Pump designation : PES6A95D410RS2844  
EP type number : 0410896893

Governor  
Governor design. : RQV300...1400AB1065  
: -32L  
Governor no. : 0420212248

Cust. part No. : 025 074 5902

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM 366  
Power KW : 95.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1680750015

Outside diameter : 6.0

x inside diameter : 1.5  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 3.25  
Tolerance mm : + 0.05  
  
test only : + 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 8.75  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 74.0

Tolerance  
cm³/1000 strokes : + 1.0

Check tolerance  
cm³/1000S. : + 3.0

Spread  
Tolerance  
cm³/1000 strokes : 3.5

Check tolerance cm<sup>3</sup>/1000S. : 6.0  
 2nd speed rpm : 300  
 Rack travel in mm : 4.50  
 Tolerance mm : ± 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 10.0  
 Tolerance cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : ± 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve travel mm : 1.06  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 1452  
 guide sleeve travel mm : 8.03  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 593  
 guide sleeve travel mm : 3.46  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 643  
 guide sleeve travel mm : 3.84  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 1030  
 guide sleeve travel mm : 5.33  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 1820  
 guide sleeve travel mm : 11.50  
 Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1450

Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 74.0  
 Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : ± 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

##### RATED SPEED

control lever position degree : 113.0  
 tolerance degree : ± 4.0  
 rack travel mm : 7.75  
 Rated speed rpm : 1445  
 Tolerance 1/min : ± 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1525  
 Tolerance 1/min : ± 15  
 rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1650

##### LOW IDLE

control lever position degree : 64.0  
 tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 300  
 rack travel mm : 4.50  
 Tolerance mm : ± 0.10

Rated speed rpm : 100  
CRT mm min. : > 6.00

---

#### TORQUE CONTROL

Rated speed rpm : 500  
rack travel mm : 8.80  
Tolerance mm : + - 0.15

---

#### START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 57.0  
Tolerance  
cm3/1000 strokes : + - 1.5  
Check tolerance  
cm3/1000S. : + - 4.0

---

#### BREAKAWAY

Rack travel in mm : 7.75  
Rated speed rpm : 1445  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.00  
Tolerance mm : + - 0.20  
Del. quantity  
cm3/1000 strokes : 83.0  
Tolerance  
cm3/1000 strokes : + - 5.0  
Check tolerance  
cm3/1000S. : + - 8.0

---

#### LOW IDLE

Rated speed rpm : 300

H02

rack travel mm : 4.50  
Tolerance mm : + - 0.10  
Del. quantity  
cm3/1000 strokes : 10.0  
Tolerance  
cm3/1000 strokes : + - 2.0  
Check tolerance  
cm3/1000S. : + - 4.5  
Spred  
Tolerance  
cm3/1000 strokes : 3.5  
Check tolerance  
cm3/1000S. : 5.5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.06.94  
Test oil : ISO 4113

Combination No. : 0402646787

Injection pump  
Pump designation : PE6P120A320LS7858  
EP type number : 0412626875

Governor  
Governor design. : RQ300/1050PA1031-12  
Governor no. : 0421801681

Cust. part No. : 0240743102

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 180.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm	:	11.25
Tolerance mm	:	+ - 0.05
Del. quantity cm <sup>3</sup> /1000 strokes	:	173.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 4.0
Spred Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0
2nd speed rpm	:	300
Rack travel in mm	:	5.20
Tolerance mm	:	+ - 0.30
Del. quantity cm <sup>3</sup> /1000 strokes	:	19.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 3.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 6.0
Spred Tolerance cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance cm <sup>3</sup> /1000S.	:	10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	:	300
guide sleeve travel mm	:	2.48
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	1108
guide sleeve travel mm	:	6.39
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	1050
guide sleeve travel mm	:	6.00
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	404

guide sleeve travel mm	:	4.97
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	490
guide sleeve travel mm	:	6.00
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	1280
guide sleeve travel mm	:	11.50
Tolerance mm	:	+ - 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm	:	600
Rack travel in mm	:	20.00
Tolerance mm	:	+ - 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1050
Aneroid pressure hPa	:	700
Del. quantity cm <sup>3</sup> /1000 strokes	:	173.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 4.0
Spred Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0

##### RATED SPEED

control lever position degree	:	91.0
tolerance degree	:	+ - 4.0
rack travel mm	:	10.25
Rated speed rpm	:	1098
Tolerance 1/min	:	+ - 8
rack travel mm	:	4.00
Rated speed rpm	:	1175
Tolerance 1/min	:	+ - 15
rack travel mm	:	0.75
Tolerance mm	:	+ - 0.75
Rated speed rpm	:	1300

---

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 240  
rack travel mm : 3.80

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. : > 7.20

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 400  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 700  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.30

Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 10.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 200  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm : < 220  
Check speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 700  
Rated speed rpm : 550  
Del. quantity cm<sup>3</sup>/1000 strokes : 164.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : 200  
Rated speed rpm : 400  
Del. quantity cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 10.25  
Rated speed rpm : 1098  
Tolerance 1/min : + - 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.06.94  
Test oil : ISO 4113

Combination No. : 0402746913

Injection pump  
Pump designation : PES6P120A720LS7237  
: -11  
EP type number : 0412726911

Governor  
Governor design. : RQ300/1100PA1008-3  
Governor no. : 0421801744

Cust. part No. : 0200747802

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM447 hA  
Power KW : 184.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 1.0

Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750075

Outside diameter : 8.0  
x inside diameter : 3.0  
x Length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.70  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 199.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 5.90  
 Tolerance mm : + - 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.22  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 1159  
 guide sleeve  
 travel mm : 6.36  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 380  
 guide sleeve  
 travel mm : 4.97  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 450

guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 1340  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
 Rack travel in mm : 20.00  
 Tolerance mm : + - 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure hPa : 1400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 199.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 96.0  
 tolerance degree : + - 4.0  
 rack travel mm : 12.70  
 Rated speed rpm : 1153  
 Tolerance 1/min : + - 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1240  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.75  
 Tolerance mm : + - 0.75  
 Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 395  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. : > 8.00

---

TOQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.05

---

ANEROID/ALTITUDE COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500

Pressure hPa : 600  
rack travel mm : 0.55  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 800  
rack travel mm : 0.90  
Tolerance mm :  $\pm$  0.10

---

START CUT-OUT

Rated speed rpm : < 220  
Check speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1400  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 203.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 12.70  
Rated speed rpm : 1153  
Tolerance 1/min :  $\pm$  8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

**BOSCH INJ. PUMP TEST SPECIFICATIONS****Note remarks**

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.06.94  
Test oil : ISO 4113

Combination No. : 0403236005

Injection pump  
Pump designation : PES6MW100/320/3RS151  
: 8-1  
EP type number : 0413206018

Governor  
Governor design. : RQV325...1300MW133  
: -1K  
Governor no. : 0420083984

Cust. part No. :

---

Customer-spec. information  
Customer : PERKINS  
Motor : 180 TI  
Power KW : 134.0

---

**TEST BENCH REQUIREMENTS**

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.00  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 13.00  
Tolerance mm : + 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

**BASIC SETTING**

Rated speed rpm : 1300

Rack travel in mm : 14.65  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 23.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
 guide sleeve  
 travel mm : 1.70  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1355  
 guide sleeve  
 travel mm : 10.23  
 Tolerance mm : + 0.25  
 Rated speed rpm : 881  
 guide sleeve  
 travel mm : 6.46  
 Tolerance mm : + 0.25  
 Rated speed rpm : 361  
 guide sleeve  
 travel mm : 2.34  
 Tolerance mm : + 0.25  
 Rated speed rpm : 411  
 guide sleeve  
 travel mm : 3.01  
 Tolerance mm : + 0.25  
 Rated speed rpm : 500  
 guide sleeve  
 travel mm : 3.92  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1630  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1380  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 900  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 141.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever  
 position degree : 120.0  
 tolerance degree : + 4.0  
 rack travel mm : 13.60  
 Rated speed rpm : 1345  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1475  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1600

##### LOW IDLE

control lever  
 position degree : 72.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm	:	325
rack travel mm	:	5.80
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	200
CRT mm min.	:	> 8.00

#### TORQUE CONTROL

Rated speed rpm	:	1300
rack travel mm	:	14.65
Tolerance mm	:	+ - 0.05
Rated speed rpm	:	800
rack travel mm	:	13.35
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	500
rack travel mm	:	11.45
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	1000
rack travel mm	:	14.25
Tolerance mm	:	+ - 0.15
Rated speed rpm	:	700
rack travel mm	:	12.70
Tolerance mm	:	+ - 0.15

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm	:	1300
Pressure hPa	:	900
rack travel mm	:	14.35
Tolerance mm	:	+ - 0.05

##### MEASUREMENT

Pressure hPa	:	-
Rated speed rpm	:	1300
rack travel mm	:	9.20
Tolerance mm	:	+ - 0.10

Rated speed rpm : 1300

Pressure hPa	:	400
rack travel mm	:	13.20
Tolerance mm	:	+ - 0.15

Pressure hPa	:	250
rack travel mm	:	10.30
Tolerance mm	:	+ - 0.05

#### START CUT-OUT

Rated speed rpm	:	< 240
Check speed 1/min	:	< 270

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	900
Rated speed rpm	:	800
Del. quantity cm <sup>3</sup> /1000 strokes	:	140.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 2.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 5.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0

Aneroid pressure hPa	:	900
Rated speed rpm	:	500
Del. quantity cm <sup>3</sup> /1000 strokes	:	118.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 2.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 5.0

Aneroid pressure hPa	:	-
Rated speed rpm	:	500
Del. quantity cm <sup>3</sup> /1000 strokes	:	69.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 3.0

#### BREAKAWAY

Rack travel in mm	:	13.60
Rated speed rpm	:	1345
Tolerance 1/min	:	+ - 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Det. quantity  
cm<sup>3</sup>/1000 strokes : 85.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 10.0

---

#### LOW IDLE

Det. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.05.94  
Test oil : ISO 4113

Combination No. : 0401446151

Injection pump  
Pump designation : PE6R120/720RS1507  
EP type number : 0411426004

Governor  
Governor design. : RQV300...950R5K  
Governor no. : 0421415005

Cust. part No. : 11032038-P02

## Customer-spec. information

Customer : VME  
Motor : TD164 KAE  
Power KW : 503.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413078

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance Check : + 0.30  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 14.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 382.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.09  
Tolerance mm : + 0.25

Rated speed rpm : 978  
guide sleeve  
travel mm : 9.28  
Tolerance mm : + 0.25

Rated speed rpm : 705  
guide sleeve  
travel mm : 6.07  
Tolerance mm : + 0.25

Rated speed rpm : 316  
guide sleeve  
travel mm : 2.30  
Tolerance mm : + 0.25

Rated speed rpm : 366  
guide sleeve  
travel mm : 2.90  
Tolerance mm : + 0.25

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.68  
Tolerance mm : + 0.25

Rated speed rpm : 1240  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1100

Rack travel in mm : 8.50  
Tolerance mm : + 2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 382.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

##### RATED SPEED

control lever  
position degree : 63.0  
tolerance degree : + 4.0

control lever  
position degree : 118.0  
tolerance degree : + 4.0

rack travel mm : 13.25  
Rated speed rpm : 965  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1080  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1150

##### LOW IDLE

control lever  
position degree : 78.0  
tolerance degree : + 4.0

control lever  
position degree : 23.0

tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm : + - 0.30

Rated speed rpm : 200

CRT mm min. : > 8.40

Rated speed rpm : 390

---

TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 13.40  
Tolerance mm : + - 0.10

Rated speed rpm : 950  
rack travel mm : 13.95  
Tolerance mm : + - 0.15

Rated speed rpm : 350  
rack travel mm : 12.00  
Tolerance mm : + - 0.20

---

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 875  
Pressure hPa : 1500  
rack travel mm : 14.25  
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 875  
rack travel mm : 10.10  
Tolerance mm : + - 0.20

Rated speed rpm : 875

Pressure hPa : 980  
rack travel mm : 3.70  
Tolerance mm : + - 0.10

Pressure hPa : 410  
rack travel mm : 0.25  
Tolerance mm : + - 0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500  
Rated speed rpm : 550  
Del. quantity cm<sup>3</sup>/1000 strokes : 407.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
Spread

Tolerance cm<sup>3</sup>/1000 strokes : 9.0  
Check tolerance cm<sup>3</sup>/1000S. : 13.0

Aneroid pressure hPa : -  
Rated speed rpm : 550  
Del. quantity cm<sup>3</sup>/1000 strokes : 256.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

---

BREAKAWAY

Rack travel in mm : 13.25  
Rated speed rpm : 965  
Tolerance 1/min : + - 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.10  
Tolerance mm : + - 0.50  
Del. quantity cm<sup>3</sup>/1000 strokes : 220.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 19.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.05.94  
Test oil : ISO 4113

Combination No. : 0402646626

Injection pump  
Pump designation : PE6P120A320RS7299  
EP type number : 0412626885

Governor  
Governor design. : RQV275...1000PA1076K  
Governor no. : 0421815357

Cust. part No. : 1280160

### Customer-spec. information

Customer : DAF  
Motor : WS 268 M  
Power KW : 268.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 160  
Tolerance l/h : + 20.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.85  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.55  
Tolerance mm : + 0.05

Del. quantity cm<sup>3</sup>/1000 strokes : \_\_\_\_\_  
 : 250.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 275  
 Rack travel in mm : 5.60  
 Tolerance mm : + - 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 2.14  
 Tolerance mm : + - 0.15  
 Rated speed rpm : 1045  
 guide sleeve  
 travel mm : 9.82  
 Tolerance mm : + - 0.20  
 Rated speed rpm : 689  
 guide sleeve  
 travel mm : 6.43  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 284  
 guide sleeve  
 travel mm : 2.27  
 Tolerance mm : + - 0.25

Rated speed rpm : 334  
 guide sleeve  
 travel mm : 3.17  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 390  
 guide sleeve  
 travel mm : 3.79  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1310  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1130  
 Rack travel in mm : 12.60  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 250.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 120.0  
 tolerance degree : + - 4.0  
 rack travel mm : 12.55  
 Rated speed rpm : 1042  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1160  
 Tolerance 1/min : + - 15

rack travel mm : 0.70  
 Tolerance mm : + - 0.70  
 Rated speed rpm : 1275

#### LOW IDLE

control lever position degree : 76.0  
 tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 275  
 rack travel mm : 4.80  
 Tolerance mm : + - 0.10

rack travel mm : 2.00  
 Rated speed rpm : 390  
 Tolerance 1/min : + - 20

Rated speed rpm : 175

CRT mm min. : > 7.50

#### TORQUE CONTROL

Rated speed rpm : 980  
 rack travel mm : 13.55  
 Tolerance mm : + - 0.05

Rated speed rpm : 750  
 rack travel mm : 13.05  
 Tolerance mm : + - 0.05

Rated speed rpm : 825  
 rack travel mm : 13.30  
 Tolerance mm : + - 0.10

Rated speed rpm : 600  
 rack travel mm : 12.10  
 Tolerance mm : + - 0.10

Rated speed rpm : 500  
 rack travel mm : 11.70  
 Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 980  
 Pressure hPa : 1500  
 rack travel mm : 13.55  
 Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 980  
 rack travel mm : 8.50  
 Tolerance mm : + - 0.10

Rated speed rpm : 980

Pressure hPa : 720  
 rack travel mm : 12.25  
 Tolerance mm : + - 0.05

Pressure hPa : 360  
 rack travel mm : 9.80  
 Tolerance mm : + - 0.10

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
 Rated speed rpm : 750  
 Del. quantity cm<sup>3</sup>/1000 strokes : 263.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 5.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
 Rated speed rpm : 600  
 Del. quantity cm<sup>3</sup>/1000 strokes : 154.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

#### BREAKAWAY

Rack travel in mm : 12.55  
 Rated speed rpm : 1042  
 Tolerance 1/min : + - 5

---

**LOW IDLE**

Rated speed rpm : 275  
rack travel mm : 5.60  
Tolerance mm : + - 0.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.05.94  
Test oil : ISO 4113

Combination No. : 0402646978

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQ300/950PA1031-1  
Governor no. : 0421801643

Cust. part No. : 0230742002

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.00  
 Tolerance mm :  $\pm$  0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 5.20  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve travel mm : 2.19  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 1004  
 guide sleeve travel mm : 6.36  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 950  
 guide sleeve travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 425

guide sleeve travel mm : 5.28  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 500  
 guide sleeve travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
 Rack travel in mm : 20.00  
 Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever position degree : 95.0  
 tolerance degree :  $\pm$  4.0  
 rack travel mm : 12.00  
 Rated speed rpm : 998  
 Tolerance 1/min :  $\pm$  8  
 rack travel mm : 4.00  
 Rated speed rpm : 1075  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : 0.75  
 Tolerance mm :  $\pm$  0.75  
 Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 410  
Tolerance 1/min : + - 20

Rated speed rpm : 200  
CRT mm min. : > 9.00

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.00  
Tolerance mm : + - 0.05

Rated speed rpm : 950  
rack travel mm : 13.00  
Tolerance mm : + - 0.05

Rated speed rpm : 400  
rack travel mm : 11.55  
Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 13.00  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.35  
Tolerance mm : + - 0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 11.55  
Tolerance mm : + - 0.10

Pressure hPa : 600

rack travel mm : 12.50  
Tolerance mm : + - 0.10

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
Rated speed rpm : 950  
Del. quantity cm<sup>3</sup>/1000 strokes : 229.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : 400  
Rated speed rpm : 400  
Del. quantity cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.5

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 998  
Tolerance 1/min : + - 8

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : + - 0.30  
Del. quantity cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.05.94  
Test oil : ISO 4113

Combination No. : 0403476136

Injection pump  
Pump designation : PES6MW100/320RS1237  
EP type number : 0413406233

Governor  
Governor design. : RSV300...1100MW1A353  
Governor no. : 0420085223

Cust. part No. :

## Customer-spec. information

Customer : VME  
Motor : TD61GD  
Power KW : 92.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.20  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance cm<sup>3</sup>/1000S. : 6.0  
 Del. quantity cm<sup>3</sup>/1000 strokes : 6.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.65  
 Tolerance mm : + - 0.35

governor spring pre-tension  
 click setting x : 4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 106.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

##### RATED SPEED

control lever position degree : 110.0

tolerance degree : + - 4.0  
 rack travel mm : 12.20  
 Rated speed rpm : 1140  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1195  
 Tolerance 1/min : + - 15  
 rack travel mm : 1.00  
 Tolerance mm : + - 0.70  
 Rated speed rpm : 1250

##### LOW IDLE

control lever position degree : 75.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 315  
 rack travel mm : 6.50  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 100  
 CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 13.20  
 Tolerance mm : + - 0.05  
 Rated speed rpm : 500  
 rack travel mm : 13.90  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 660  
 rack travel mm : 13.50  
 Tolerance mm : + - 0.10

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
 Rated speed rpm : 500  
 Del. quantity cm<sup>3</sup>/1000 strokes : 107.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

#### BREAKAWAY

Rack travel in mm : 12.20  
Rated speed rpm : 1140  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 10.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 6.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.05.94  
Test oil : ISO 4113

Combination No. : 0403446316

Injection pump  
Pump designation : PES6MW100/320RS1216  
EP type number : -1  
: 0413406223

Governor  
Governor design. : RQV350...1175MW113  
: -2  
Governor no. : 0420083248

Cust. part No. :

## Customer-spec. information

Customer : RVI  
Motor : MIDR 060226 X  
Power KW : 166.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413033

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 13.00  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm : 13.95  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 123.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + - 3.0

Spread Tolerance cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance cm<sup>3</sup>/1000S. : 6.0

Del. quantity cm<sup>3</sup>/1000 strokes : 30.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0

Check tolerance cm<sup>3</sup>/1000S. : + - 4.5

Spread Tolerance cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance cm<sup>3</sup>/1000S. : 5.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve travel mm : 0.86  
Tolerance mm : + - 0.25

Rated speed rpm : 1266  
guide sleeve travel mm : 7.11  
Tolerance mm : + - 0.25

Rated speed rpm : 929  
guide sleeve travel mm : 5.38  
Tolerance mm : + - 0.25

Rated speed rpm : 468  
guide sleeve travel mm : 2.46  
Tolerance mm : + - 0.25

Rated speed rpm : 518  
guide sleeve travel mm : 3.03  
Tolerance mm : + - 0.25

Rated speed rpm : 620  
guide sleeve travel mm : 3.63  
Tolerance mm : + - 0.25

Rated speed rpm : 1800  
guide sleeve travel mm : 11.50  
Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
Rated speed rpm : 1460

Rack travel in mm : 16.50  
Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175  
Aneroid pressure hPa : 1000  
Del. quantity cm<sup>3</sup>/1000 strokes : 123.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.0  
Spread Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance cm<sup>3</sup>/1000S. : 6.0

##### RATED SPEED

control lever position degree : 305.0  
tolerance degree : + - 4.0

rack travel mm : -1.00  
Rated speed rpm : 1235  
Tolerance 1/min : + - 5

rack travel mm : -9.90  
Rated speed rpm : 1465  
Tolerance 1/min : + - 15

rack travel mm : -13.50  
Tolerance mm : + - 0.50  
Rated speed rpm : 1600

##### LOW IDLE

control lever position degree : 248.0

tolerance degree : + - 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : -7.80  
Tolerance mm : + - 0.20

Rated speed rpm : 200

CRT mm min. : > -7.00

---

TORQUE CONTROL

Rated speed rpm : 1175

Rated speed rpm : 700

Rated speed rpm : 700  
rack travel mm : -5.50  
Tolerance mm : + - 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -3.60  
Tolerance mm : + - 0.30

Rated speed rpm : 500

Pressure hPa : 240  
rack travel mm : -2.85  
Tolerance mm : + - 0.15

Pressure hPa : 520  
rack travel mm : -0.75  
Tolerance mm : + - 0.05

---

START CUT-OUT

Rated speed rpm : < 260  
Check speed 1/min : < 280

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
Rated speed rpm : 700  
Del. quantity cm3/1000 strokes : 131.5  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 5.0  
Spred  
Tolerance cm3/1000 strokes : 6.0  
Check tolerance cm3/1000S. : 9.0

Aneroid pressure hPa : -  
Rated speed rpm : 700  
Del. quantity cm3/1000 strokes : 58.0  
Tolerance cm3/1000 strokes : + - 4.0  
Check tolerance cm3/1000S. : + - 7.5

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm3/1000 strokes : 68.0  
Tolerance cm3/1000 strokes : + - 1.0  
Check tolerance cm3/1000S. : + - 3.0

---

BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1235  
Tolerance 1/min : + - 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + - 0.75  
Del. quantity cm3/1000 strokes : 105.0  
Tolerance cm3/1000 strokes : + - 10.0  
Check tolerance cm3/1000S. : + - 13.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.05.94  
Test oil : ISO 4113

Combination No. : 0403446318

Injection pump  
Pump designation : PES6MW100/320RS1214  
: -1  
EP type number : 0413406224

Governor  
Governor design. : RQV275...1250MW115  
: -1K  
Governor no. : 0420083992

Cust. part No. :

---

Customer-spec. information  
Customer : RVI  
Motor : MIDR 060226 V  
Power KW : 129.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413033

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 18.00  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.15

Rack travel in mm : 13.15  
Tolerance mm : + 0.05  
Tolerance mm : + 0.05

---

Del. quantity cm <sup>3</sup> /1000 strokes	: 113.0
Tolerance cm <sup>3</sup> /1000 strokes	: + - 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + - 3.0
Spred Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 6.0
Del. quantity cm <sup>3</sup> /1000 strokes	: 22.0
Tolerance cm <sup>3</sup> /1000 strokes	: + - 2.0
Check tolerance cm <sup>3</sup> /1000S.	: + - 4.5
Spred Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 5.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	: 275
guide sleeve travel mm	: 1.01
Tolerance mm	: + - 0.25
Rated speed rpm	: 1344
guide sleeve travel mm	: 10.00
Tolerance mm	: + - 0.25
Rated speed rpm	: 924
guide sleeve travel mm	: 6.78
Tolerance mm	: + - 0.25
Rated speed rpm	: 389
guide sleeve travel mm	: 2.39
Tolerance mm	: + - 0.25
Rated speed rpm	: 439
guide sleeve travel mm	: 2.90
Tolerance mm	: + - 0.25

Rated speed rpm guide sleeve travel mm	: 560
Tolerance mm	: + - 0.25
Rated speed rpm guide sleeve travel mm	: 1650
Tolerance mm	: + - 0.50

##### GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1350
Rack travel in mm	: 16.50
Tolerance mm	: + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
Aneroid pressure hPa	: 1000
Del. quantity cm <sup>3</sup> /1000 strokes	: 113.0
Tolerance cm <sup>3</sup> /1000 strokes	: + - 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + - 3.0
Spred Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 6.0

##### RATED SPEED

control lever position degree	: 300.0
tolerance degree	: + - 4.0
rack travel mm	: -1.00
Rated speed rpm	: 1305
Tolerance 1/min	: + - 5
rack travel mm	: -9.10
Rated speed rpm	: 1460
Tolerance 1/min	: + - 15
rack travel mm	: -12.60
Tolerance mm	: + - 0.50
Rated speed rpm	: 1600

---

**LOW IDLE**

control lever  
position degree : 242.0  
tolerance degree :  $\pm$  4.0

**Testing:**

Rated speed rpm : 275  
rack travel mm : -7.50  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 200

CRT mm min. : > -6.90

---

**TORQUE CONTROL**

Rated speed rpm : 1250  
rack travel mm : 13.15  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : -0.90  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : -4.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350  
rack travel mm : -1.60  
Tolerance mm :  $\pm$  0.40

---

**ANEROID/ALTITUDE COMPENSATOR TEST****SETTING**

Rated speed rpm : 1250  
Pressure hPa : 1000

**MEASUREMENT**

Pressure hPa : -  
Rated speed rpm : 1250  
rack travel mm : -1.90  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1250

Pressure hPa : 120  
rack travel mm : -1.40  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 240  
rack travel mm : -0.50  
Tolerance mm :  $\pm$  0.05

---

**START CUT-OUT**

Rated speed rpm : < 230  
Check speed 1/min : < 245

---

**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure hPa : 1000  
Rated speed rpm : 700  
Del. quantity cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure hPa : 1000  
Rated speed rpm : 700  
Del. quantity cm<sup>3</sup>/1000 strokes : 65.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  7.5

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

**BREAKAWAY**

Rack travel in mm : -1.00  
Rated speed rpm : 1305  
Tolerance 1/min :  $\pm$  5

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + - 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 13.0

---

### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.06.94  
Test oil : ISO 4113

Combination No. : 0403244032

Injection pump  
Pump designation : PES4MW100/720RS1519  
: -2

EP type number : 0413204017

Governor  
Governor design. : RQV300...1300MW132  
: -1

Governor no. : 0420083292

Cust. part No. : 0240741102

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM364LA  
Power KW : 103.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.90  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance cm<sup>3</sup>/1000S. : 7.5  
 Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve travel mm : 0.91  
 Tolerance mm : + 0.25

Rated speed rpm : 1354  
 guide sleeve travel mm : 7.77  
 Tolerance mm : + 0.25

Rated speed rpm : 1150  
 guide sleeve travel mm : 5.95  
 Tolerance mm : + 0.25

Rated speed rpm : 629  
 guide sleeve travel mm : 3.15  
 Tolerance mm : + 0.25

Rated speed rpm : 679  
 guide sleeve travel mm : 3.45  
 Tolerance mm : + 0.25

Rated speed rpm : 820  
 guide sleeve travel mm : 4.09  
 Tolerance mm : + 0.25

Rated speed rpm : 1596  
 guide sleeve travel mm : 12.00  
 Tolerance mm : + 0.25

Rated speed rpm : 1690  
 guide sleeve travel mm : 13.50

Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1510

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure hPa : 1400  
 Del. quantity cm<sup>3</sup>/1000 strokes : 126.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever position degree : 116.0  
 tolerance degree : + 4.0

rack travel mm : 12.90  
 Rated speed rpm : 1345  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1465  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1550

##### LOW IDLE

control lever position degree : 71.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 3.90  
Tolerance mm : + - 0.10

Rated speed rpm : 200  
CRT mm min. : > 4.50

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 13.90  
Tolerance mm : + - 0.05

Rated speed rpm : 750  
rack travel mm : 13.90  
Tolerance mm : + - 0.10

Rated speed rpm : 600  
rack travel mm : 13.90  
Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1400  
rack travel mm : 13.90  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.10  
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 800  
rack travel mm : 13.10  
Tolerance mm : + - 0.10

Pressure hPa : 550  
rack travel mm : 11.60  
Tolerance mm : + - 0.10

#### START CUT-OUT

Rated speed rpm : < 200  
Check speed 1/min : < 220

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1400  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 124.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure hPa : 1400  
Rated speed rpm : 600  
Del. quantity cm<sup>3</sup>/1000 strokes : 126.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 5.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 67.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.0

#### BREAKAWAY

Rack travel in mm : 12.90  
Rated speed rpm : 1345  
Tolerance 1/min : + - 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 5.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 8.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.06.94  
Test oil : ISO 4113

Combination No. : 0403244033

Injection pump  
Pump designation : PES4MW100/720RS1519  
: -2

EP type number : 0413204017

Governor  
Governor design. : RQV300...1300MW132  
: -1

Governor no. : 0420083292

Cust. part No. : 0240748202

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM364LA  
Power KW : 103.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.90  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance cm<sup>3</sup>/1000S. : 7.5  
 Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve travel mm : 0.91  
 Tolerance mm : + - 0.25

Rated speed rpm : 1354  
 guide sleeve travel mm : 7.77  
 Tolerance mm : + - 0.25

Rated speed rpm : 1150  
 guide sleeve travel mm : 5.95  
 Tolerance mm : + - 0.25

Rated speed rpm : 629  
 guide sleeve travel mm : 3.15  
 Tolerance mm : + - 0.25

Rated speed rpm : 679  
 guide sleeve travel mm : 3.45  
 Tolerance mm : + - 0.25

Rated speed rpm : 820  
 guide sleeve travel mm : 4.09  
 Tolerance mm : + - 0.25

Rated speed rpm : 1596  
 guide sleeve travel mm : 12.00  
 Tolerance mm : + - 0.25

Rated speed rpm : 1690  
 guide sleeve travel mm : 13.50

Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1510

Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure hPa : 1400  
 Del. quantity cm<sup>3</sup>/1000 strokes : 126.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.5

RATED SPEED

control lever position degree : 116.0  
 tolerance degree : + - 4.0  
 rack travel mm : 12.90  
 Rated speed rpm : 1345  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1465  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1550

LOW IDLE

control lever position degree : 71.0  
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 3.90  
 Tolerance mm : + - 0.10  
  
 Rated speed rpm : 200  
  
 CRT mm min. : > 4.50

#### TORQUE CONTROL

Rated speed rpm : 1300  
 rack travel mm : 13.90  
 Tolerance mm : + - 0.05  
  
 Rated speed rpm : 750  
 rack travel mm : 13.90  
 Tolerance mm : + - 0.10  
  
 Rated speed rpm : 600  
 rack travel mm : 13.90  
 Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1400  
 rack travel mm : 13.90  
 Tolerance mm : + - 0.05

##### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 500  
 rack travel mm : 11.10  
 Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 600  
 rack travel mm : 13.10  
 Tolerance mm : + - 0.10

Pressure hPa : 350  
 rack travel mm : 11.60  
 Tolerance mm : + - 0.10

##### START CUT-OUT

Rated speed rpm : < 200  
 Check speed 1/min : < 220

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1400  
 Rated speed rpm : 750  
 Del. quantity cm<sup>3</sup>/1000 strokes : 124.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 5.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure hPa : 1400  
 Rated speed rpm : 600  
 Del. quantity cm<sup>3</sup>/1000 strokes : 126.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 5.0

Aneroid pressure hPa : -  
 Rated speed rpm : 500  
 Del. quantity cm<sup>3</sup>/1000 strokes : 67.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 3.0

#### BREAKAWAY

Rack travel in mm : 12.90  
 Rated speed rpm : 1345  
 Tolerance 1/min : + - 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity cm<sup>3</sup>/1000 strokes : 150.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 8.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + - 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 5.5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.06.94  
Test oil : ISO 4113

Combination No. : 0403446302

Injection pump  
Pump designation : PES6MW100/720RS1131  
EP type number : 0413406123

Governor  
Governor design. : RQV300...1300MW50  
: -24  
Governor no. : 0420083270

Cust. part No. : 0220745202

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM 366 A  
Power KW : 121.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680715089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.75  
Tolerance mm : + 0.05

test only : + 0.05

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.50  
Check tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.95  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5

Spred

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1350

Rack travel in mm : 16.50  
Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure

hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

Spred

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

##### RATED SPEED

control lever  
position degree : 112.0  
tolerance degree : + - 4.0

rack travel mm : 9.95  
Rated speed rpm : 1345  
Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 1440  
Tolerance 1/min : + - 15

rack travel mm : 0.50  
Tolerance mm : + - 0.50  
Rated speed rpm : 1500

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm : + - 0.10

Rated speed rpm : 200  
CRT mm min. : > 8.00

##### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 10.95  
Tolerance mm : + - 0.05

Rated speed rpm : 750  
rack travel mm : 11.55  
Tolerance mm : + - 0.05

Rated speed rpm : 1100  
rack travel mm : 11.20  
Tolerance mm : + - 0.10

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 11.55  
Tolerance mm : + - 0.05

##### MEASUREMENT

Pressure hPa : -

Rated speed rpm : 500  
rack travel mm : 9.70  
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 300  
rack travel mm : 11.15  
Tolerance mm : + - 0.15

Pressure hPa : 200  
rack travel mm : 10.25  
Tolerance mm : + - 0.05

---

#### START CUT-OUT

Rated speed rpm : < 220  
Check speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : 700  
Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

##### Aneroid pressure

hPa : -  
Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 48.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

---

#### BREAKAWAY

Rack travel in mm : 9.95  
Rated speed rpm : 1345  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 8.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.07.94  
Test oil : ISO 4113

Combination No. : 0403486106

Injection pump  
Pump designation : PES6MW100/321RS1232  
EP type number : 0413406226

Governor  
Governor design. : RSV300...1150MWA343  
: -2  
Governor no. : 0420085210

Cust. part No. : 3-7262

## Customer-spec. information

Customer : MAN  
Motor : D0826LE 523  
Power KW : 154.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1  
S.o.d. blocking  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0

Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.5  
 Del. quantity cm<sup>3</sup>/1000 strokes : 15.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
 Spred  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + 0.35  
 governor spring pre-tension click setting x : 5.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure hPa : 1200  
 Del. quantity cm<sup>3</sup>/1000 strokes : 166.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spred

Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever position degree : 104.0  
 tolerance degree : + 4.0  
 rack travel mm : 12.00  
 Rated speed rpm : 1205  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1305  
 Tolerance 1/min : + 15  
 rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1400  
 rack travel mm : 4.00

##### LOW IDLE

control lever position degree : 77.0  
 tolerance degree : + 4.0

Testing:  
 Rated speed rpm : 300  
 rack travel mm : 5.50  
 Tolerance mm : + 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 100  
 CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1150  
 rack travel mm : 13.05  
 Tolerance mm : + 0.05  
 Rated speed rpm : 925  
 rack travel mm : 13.40  
 Tolerance mm : + 0.10  
 Rated speed rpm : 600  
 rack travel mm : 13.70

Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.70  
Tolerance mm : + 0.10

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.45  
Tolerance mm : + 0.05

Rated speed rpm : 500

Pressure hPa : 750  
rack travel mm : 12.35  
Tolerance mm : + 0.15

Pressure hPa : 150  
rack travel mm : 9.75  
Tolerance mm : + 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 925  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 162.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

#### Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

#### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1205  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.09.94  
Test oil : ISO 4113

Combination No. : 0402046865A

Injection pump  
Pump designation : PES6P120A320LS3321  
EP type number : 0412026766

Governor  
Governor design. : RQ275...950PA1085  
Governor no. : 0421801691

Cust. part No. :

### Customer-spec. information

Customer : RABA  
Motor : D10-UTS184  
Power KW : 184.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

### REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0

Tolerance mm/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 275  
 Rack travel in mm : 9.10  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 22.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spread Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve travel mm : 2.26  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 1020  
 guide sleeve travel mm : 6.35  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 950  
 guide sleeve travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 369  
 guide sleeve travel mm : 4.64  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 460  
 guide sleeve travel mm : 6.00

Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 1190  
 guide sleeve travel mm : 11.50  
 Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 500  
 Rack travel in mm : 20.00  
 Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 197.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever position degree : 36.0  
 tolerance degree :  $\pm$  4.0  
 control lever position degree : 98.0  
 tolerance degree :  $\pm$  4.0  
 rack travel mm : 13.05  
 Rated speed rpm : 1012  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : 4.00  
 Rated speed rpm : 1100  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : 0.50  
 Tolerance mm :  $\pm$  0.50  
 Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + - 4.0

control lever  
position degree : 11.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : 5.80  
Tolerance mm : + - 0.10

Rated speed rpm : 355  
Tolerance 1/min : + - 20

Rated speed rpm : 175

CRT mm min. : > 8.00

#### TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 14.05  
Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 14.05  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.80  
Tolerance mm : + - 0.20

Rated speed rpm : 500

Pressure hPa : 380  
rack travel mm : 12.20  
Tolerance mm : + - 0.20

Pressure hPa : 590  
rack travel mm : 13.50  
Tolerance mm : + - 0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Rated speed rpm : 950  
Del. quantity cm<sup>3</sup>/1000 strokes : 198.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 116.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

#### BREAKAWAY

Rack travel in mm : 13.05  
Rated speed rpm : 1012  
Tolerance 1/min : + - 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 20.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 24.0

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : 9.10  
Tolerance mm : + - 0.30  
Del. quantity cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0



## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.09.94  
Test oil : ISO 4113

Combination No. : 0402646611

Injection pump  
Pump designation : PE6P120A720RS7188  
: -10  
EP type number : 0412626924

Governor  
Governer design. : RQV200...950PA725-9  
Governer no. : 0421813988

Cust. part No. : 1340660

### Customer-spec. information

Customer : SCANIA  
Motor : DSC 11 39

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 250  
Tolerance l/h : + 20.0

Test nozzle holder  
assembly : 1688901104

Opening pressure  
bar : 251.5  
Tolerance bar : + 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45  
 Tolerance mm :  $\pm$  0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 239.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0  
 2nd speed rpm : 250  
 Rack travel in mm : 4.70  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1250

Rack travel in mm : 10.50  
 Tolerance mm :  $\pm$  2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 239.0

Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
 position degree : 59.0  
 tolerance degree :  $\pm$  4.0  
 control lever  
 position degree : 113.0  
 tolerance degree :  $\pm$  4.0  
 rack travel mm : 12.40  
 Rated speed rpm : 995  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : 4.00  
 Rated speed rpm : 1210  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : 0.50  
 Tolerance mm :  $\pm$  0.50  
 Rated speed rpm : 1350

##### LOW IDLE

control lever  
 position degree : 65.0  
 tolerance degree :  $\pm$  4.0

control lever  
 position degree : 10.0  
 tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 250  
 rack travel mm : 4.70  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 150  
 CRT mm min. : > 6.00  
 Rated speed rpm : 250

##### TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 13.45  
Tolerance mm : + - 0.05

Rack travel in mm : 12.40  
Rated speed rpm : 995  
Tolerance 1/min : + - 5

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.45  
Tolerance mm : + - 0.05

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm : + - 0.20  
Del. quantity cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 20.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 24.0

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.40  
Tolerance mm : + - 0.20

---

##### LOW IDLE

Rated speed rpm : 500  
rack travel mm : 11.00  
Tolerance mm : + - 0.15  
Pressure hPa : 440  
rack travel mm : 12.05  
Tolerance mm : + - 0.05

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm : + - 0.30  
Del. quantity cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance cm<sup>3</sup>/1000S. : 8.0

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Rated speed rpm : 950  
Del. quantity cm<sup>3</sup>/1000 strokes : 224.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 4.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

---

#### BREAKAWAY

**BOSCH INJ. PUMP TEST SPECIFICATIONS**

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.09.94  
Test oil : ISO 4113

Combination No. : 0402646616

Injection pump  
Pump designation : PE6P120A320LS7278  
EP type number : 0412626880

Governor  
Governor design. : RQV325...1000PA1058  
Governor no. : 0421814047

Cust. part No. :

---

Customer-spec. information  
Customer : RBOS-CS  
Motor : M640S  
Power KW : 242.0

---

**TEST BENCH REQUIREMENTS**

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

K02

x length mm : 600

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.00  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

**BEGINNING OF DELIVERY DIFFERENCE**

Time to cyl. no. : 1

**BASIC SETTING**

Rated speed rpm : 1000

Rack travel in mm : 13.45  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 233.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 24.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
 guide sleeve  
 travel mm : 1.55  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1056  
 guide sleeve  
 travel mm : 8.66  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 764  
 guide sleeve  
 travel mm : 5.77  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 404  
 guide sleeve  
 travel mm : 2.41  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 500  
 guide sleeve  
 travel mm : 3.35  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1270  
 guide sleeve  
 travel mm : 11.50

Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1100  
 Rack travel in mm : 12.30  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 233.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : + - 63.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : + - 117.0  
 tolerance degree : + - 4.0  
 rack travel mm : 12.45  
 Rated speed rpm : 1045  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1160  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1250

##### LOW IDLE

control lever  
position degree : 64.0  
tolerance degree : + - 4.0

control lever  
position degree : 9.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 325  
rack travel mm : 5.10  
Tolerance mm : + - 0.30

rack travel mm : 2.00  
Rated speed rpm : 485  
Tolerance 1/min : + - 30

Rated speed rpm : 225  
CRT mm min. : > 6.70

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.45  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.50  
Tolerance mm : + - 0.20

Rated speed rpm : 500

Pressure hPa : 520  
rack travel mm : 10.60  
Tolerance mm : + - 0.25

Pressure hPa : 1000  
rack travel mm : 13.00  
Tolerance mm : + - 0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

#### BREAKAWAY

Rack travel in mm : 12.45  
Rated speed rpm : 1045  
Tolerance 1/min : + - 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 310.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 24.0

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.09.94  
Test oil : ISO 4113

Combination No. : 0402646623

Injection pump  
Pump designation : PE6P120A320RS7288  
EP type number : 0412626882

Governor  
Governor design. : RQV250...900PA1069  
: -1

Governor no. : 0421814070

Cust. part No. : 866141-P03 + E  
: -KONTR

### Customer-spec. information

Customer : PENTA  
Motor : TAD 1030P

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413046

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750015

Outside diameter : 6.0

K05

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	:	250
guide sleeve		
travel mm	:	1.12
Tolerance mm	:	+ - 0.25
Rated speed rpm	:	949
guide sleeve		
travel mm	:	7.39
Tolerance mm	:	+ - 0.25
Rated speed rpm	:	657
guide sleeve		
travel mm	:	5.07
Tolerance mm	:	+ - 0.25
Rated speed rpm	:	315
guide sleeve		
travel mm	:	1.98
Tolerance mm	:	+ - 0.25
Rated speed rpm	:	365
guide sleeve		
travel mm	:	2.63
Tolerance mm	:	+ - 0.25
Rated speed rpm	:	420
guide sleeve		
travel mm	:	3.17
Tolerance mm	:	+ - 0.25
Rated speed rpm	:	1290
guide sleeve		
travel mm	:	11.50
Tolerance mm	:	+ - 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1150  
 Rack travel in mm : 9.00  
 Tolerance mm : + - 3.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 290.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

##### RATED SPEED

control lever  
 position degree : 119.0  
 tolerance degree : + - 4.0  
 rack travel mm : 12.45  
 Rated speed rpm : 935  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1075  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1150

##### LOW IDLE

control lever  
 position degree : 80.0  
 tolerance degree : + - 4.0  
 Testing:  
 Rated speed rpm : 250  
 rack travel mm : 7.70  
 Tolerance mm : + - 0.30  
 Rated speed rpm : 150

CRT mm min. : > 9.00  
Rated speed rpm : 350

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.45  
Tolerance mm : + - 0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.00  
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 300  
rack travel mm : 10.30  
Tolerance mm : + - 0.10

Pressure hPa : 1100  
rack travel mm : 13.15  
Tolerance mm : + - 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

#### BREAKAWAY

Rack travel in mm : 12.45  
Rated speed rpm : 935  
Tolerance 1/min : + - 5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.09.94  
Test oil : ISO 4113

Combination No. : 0402746957

Injection pump  
Pump designation : PES6P120A720RS7292  
EP type number : 0412726897

Governor  
Governor design. : RQV350...1150PA1074  
: -2K  
Governor no. : 0421815367

Cust. part No. : 0250741002

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 157.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 100  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.00  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

\*NW after s.o.d. : 3.0  
S.o.d. blocking  
Barrel no. : 1

\*NW after s.o.d. : 3.0

### BASIC SETTING

Rated speed rpm	:	1150
Rack travel in mm	:	13.50
Tolerance mm	:	+ - 0.05
Del. quantity cm <sup>3</sup> /1000 strokes	:	272.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 4.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0
2nd speed rpm	:	350
Rack travel in mm	:	7.30
Tolerance mm	:	+ - 0.30
Del. quantity cm <sup>3</sup> /1000 strokes	:	13.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 3.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 6.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	8.0
Check tolerance cm <sup>3</sup> /1000S.	:	12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	:	350
guide sleeve travel mm	:	1.84
Tolerance mm	:	+ - 0.25
Rated speed rpm	:	1208
guide sleeve travel mm	:	9.41
Tolerance mm	:	+ - 0.25
Rated speed rpm	:	836
guide sleeve travel mm	:	5.58
Tolerance mm	:	+ - 0.25

Rated speed rpm	:	367
guide sleeve travel mm	:	1.96
Tolerance mm	:	+ - 0.25
Rated speed rpm	:	417
guide sleeve travel mm	:	2.46
Tolerance mm	:	+ - 0.25
Rated speed rpm	:	510
guide sleeve travel mm	:	3.11
Tolerance mm	:	+ - 0.25
Rated speed rpm	:	1480
guide sleeve travel mm	:	13.50
Tolerance mm	:	+ - 0.50

##### GUIDE SLEEVE POSITION

control lever position degree	:	- 1
Rated speed rpm	:	1310
Rack travel in mm	:	12.50
Tolerance mm	:	+ - 2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1150
Aneroid pressure hPa	:	1500
Del. quantity cm <sup>3</sup> /1000 strokes	:	272.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ - 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ - 4.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0

##### RATED SPEED

control lever position degree	:	112.0
tolerance degree	:	+ - 4.0
rack travel mm	:	12.50
Rated speed rpm	:	1195

Tolerance 1/min	:	+ -	5
rack travel mm	:		4.00
Rated speed rpm	:		1310
Tolerance 1/min	:	+ -	15
rack travel mm	:		0.70
Tolerance mm	:	+ -	0.70
Rated speed rpm	:		1400

---

#### LOW IDLE

control lever position degree	:		65.0
tolerance degree	:	+ -	4.0

#### Testing:

Rated speed rpm	:		350
rack travel mm	:		5.00
Tolerance mm	:	+ -	0.10
Rated speed rpm	:		250
CRT mm min.	:	>	6.50
Rated speed rpm	:		400

---

#### TORQUE CONTROL

Rated speed rpm	:		1150
rack travel mm	:		13.50
Tolerance mm	:	+ -	0.05
Rated speed rpm	:		950
rack travel mm	:		13.45
Tolerance mm	:	+ -	0.10
Rated speed rpm	:		750
rack travel mm	:		12.80
Tolerance mm	:	+ -	0.10
Rated speed rpm	:		600
rack travel mm	:		12.70
Tolerance mm	:	+ -	0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm	:		1150
Pressure hPa	:		1500
rack travel mm	:		13.50
Tolerance mm	:	+ -	0.05

#### MEASUREMENT

Pressure hPa	:	-	
Rated speed rpm	:		1150
rack travel mm	:		10.00
Tolerance mm	:	+ -	0.15
Rated speed rpm	:		1150
Pressure hPa	:		800
rack travel mm	:		12.55
Tolerance mm	:	+ -	0.05
Pressure hPa	:		250
rack travel mm	:		10.50
Tolerance mm	:	+ -	0.15

---

#### START CUT-OUT

Rated speed rpm	:	<	270
Check speed 1/min.	:	<	290

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:		1500
Rated speed rpm	:		750
Del. quantity cm <sup>3</sup> /1000 strokes	:		269.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ -	2.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ -	5.0
Spread			
Tolerance cm <sup>3</sup> /1000 strokes	:		8.0
Check tolerance cm <sup>3</sup> /1000S.	:		12.0
Aneroid pressure hPa	:		1500
Rated speed rpm	:		600
Del. quantity cm <sup>3</sup> /1000 strokes	:		274.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ -	3.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ -	6.0

---

Aneroid pressure hPa	:	-	
Rated speed rpm	:		500
Del. quantity cm <sup>3</sup> /1000 strokes	:		140.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ -	1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

#### BREAKAWAY

Rack travel in mm : 12.50  
Rated speed rpm : 1195  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.50  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 19.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 7.30  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.08.94  
Test oil : ISO 4113

Combination No. : 0402040700

Injection pump  
Pump designation : PES12P120A920RS3335  
EP type number : 0412020701

Governor  
Governor design. : RGV350...1400PA1145  
Governor no. : 0421814092

Cust. part No. :

---

Customer-spec. information  
Customer : FINCANTIERI  
Motor : 1312 T2

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Prestroke mm : 3.55  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1-12- 9- 4- 5  
: - 8- 11- 2- 3  
: - 10- 7- 6

Phasing : 0-45-60-105-120  
: -165-180-225-240  
: -285-300-345  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 15.30  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 288.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 7.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 11.0  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 39.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 10.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 14.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
 guide sleeve travel mm : 1.63  
 Tolerance mm : + - 0.20  
 Rated speed rpm : 1415  
 guide sleeve travel mm : 8.40  
 Tolerance mm : + - 0.15  
 Rated speed rpm : 910  
 guide sleeve travel mm : 5.33  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 394  
 guide sleeve travel mm : 2.38  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 444  
 guide sleeve travel mm : 2.95  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 520  
 guide sleeve travel mm : 3.49  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1740  
 guide sleeve travel mm : 11.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1490  
 Rack travel in mm : 14.30  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 288.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 7.0  
 Check tolerance cm<sup>3</sup>/1000S. : 11.0

##### RATED SPEED

control lever position degree : 117.0  
 tolerance degree : + - 4.0  
 rack travel mm : 14.30  
 Rated speed rpm : 1395  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1630  
 Tolerance 1/min : + - 15  
 rack travel mm : 1.00  
 Tolerance mm : + - 0.70  
 Rated speed rpm : 1750

##### LOW IDLE

control lever position degree : 73.0  
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 350  
 rack travel mm : 8.10  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 250  
 CRT mm min. : > 9.60  
 Rated speed rpm : 525

---

#### TORQUE CONTROL

Rated speed rpm : 750  
 rack travel mm : 15.30  
 Tolerance mm :  $\pm$  0.05  
 Rated speed rpm : 1350  
 rack travel mm : 15.30  
 Tolerance mm :  $\pm$  0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1000  
 rack travel mm : 15.35  
 Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 500  
 rack travel mm : 10.80  
 Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 400  
 rack travel mm : 12.00  
 Tolerance mm :  $\pm$  0.20

Pressure hPa : 500  
 rack travel mm : 13.75  
 Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
 Rated speed rpm : 1350  
 Del. quantity cm<sup>3</sup>/1000 strokes : 278.0

Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Aneroid pressure hPa : -  
 Rated speed rpm : 500  
 Del. quantity cm<sup>3</sup>/1000 strokes : 139.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 14.30  
 Rated speed rpm : 1395  
 Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 20.25  
 Tolerance mm :  $\pm$  0.75  
 Del. quantity cm<sup>3</sup>/1000 strokes : 420.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Del. quantity cm<sup>3</sup>/1000 strokes : 39.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 10.0  
 Check tolerance cm<sup>3</sup>/1000S. : 14.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.09.94  
Test oil : ISO 4113

Combination No. : 0402646649

Injection pump  
Pump designation : PE6P130A720RS7339  
EP type number : 0412636833

Governor  
Governor design. : RQV300...950PA905-1  
Governor no. : 0421814097

Cust. part No. :

---

Customer-spec. information  
Customer : IVECO-AIFO  
Motor : 8210.42.369  
Power KW : 353.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

### REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 14.00  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1  
S.o.d. blocking  
Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.95

Tolerance mm : + 0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 338.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0  
 2nd speed rpm : 300  
 Rack travel in mm : > 4.30  
 Tolerance mm : + 0.20  
 Del. quantity cm<sup>3</sup>/1000 strokes : 24.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 7.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.81  
 Tolerance mm : + 0.20  
 Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 7.75  
 Tolerance mm : + 0.15  
 Rated speed rpm : 409  
 guide sleeve  
 travel mm : 2.86  
 Tolerance mm : + 0.25  
 Rated speed rpm : 459  
 guide sleeve  
 travel mm : 3.29  
 Tolerance mm : + 0.25

Rated speed rpm : 720  
 guide sleeve  
 travel mm : 4.94  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1260  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1090  
 Rack travel in mm : 12.90  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
 Aneroid pressure hPa : 900  
 Del. quantity cm<sup>3</sup>/1000 strokes : 338.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
 position degree : 114.0  
 tolerance degree : + 4.0  
 rack travel mm : 12.90  
 Rated speed rpm : 995  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1095  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1200  
 rack travel mm : 4.00

---

## LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : + 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 4.30  
Tolerance mm : + 0.10

Rated speed rpm : 200  
CRT mm min. : > 5.80

Rated speed rpm : 430

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 13.95  
Tolerance mm : + 0.05

### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 350  
rack travel mm : 10.25  
Tolerance mm : + 0.10

Pressure hPa : -  
rack travel mm : 12.95  
Tolerance mm : + 0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

## BREAKAWAY

Rack travel in mm : 12.90  
Rated speed rpm : 995  
Tolerance 1/min : + 5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : > 4.30  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 7.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.09.94  
Test oil : ISO 4113

Combination No. : 0402646777

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQV300...1050PA1168  
Governor no. : 0421814108

Cust. part No. : 0250745102

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.00  
 Tolerance mm :  $\pm$  0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 5.20  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve travel mm : 1.29  
 Tolerance mm :  $\pm$  0.15  
 Rated speed rpm : 1107  
 guide sleeve travel mm : 8.52  
 Tolerance mm :  $\pm$  0.20  
 Rated speed rpm : 1640  
 guide sleeve travel mm : 25.13  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 558

guide sleeve travel mm : 4.53  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 608  
 guide sleeve travel mm : 5.03  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 820  
 guide sleeve travel mm : 6.13  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 1183  
 guide sleeve travel mm : 10.00  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 1280  
 guide sleeve travel mm : 11.50  
 Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1160  
 Rack travel in mm : 11.70  
 Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever position degree : 120.0  
 tolerance degree :  $\pm$  4.0

rack travel mm : 12.00  
Rated speed rpm : 1095  
Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 1170  
Tolerance 1/min : + - 15

rack travel mm : 0.75  
Tolerance mm : + - 0.75  
Rated speed rpm : 1300

#### LOW IDLE

control lever  
position degree : 80.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : + - 0.10

Rated speed rpm : 200

CRT mm min. : > 8.00

Rated speed rpm : 350

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.00  
Tolerance mm : + - 0.05

Rated speed rpm : 1050  
rack travel mm : 13.00  
Tolerance mm : + - 0.10

Rated speed rpm : 400  
rack travel mm : 11.55  
Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 13.00  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.35  
Tolerance mm : + - 0.15

Rated speed rpm : 400

rack travel mm : 11.55  
Tolerance mm : + - 0.10

Pressure hPa : 600  
rack travel mm : 12.50  
Tolerance mm : + - 0.10

#### START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 228.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 400  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1095  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.09.94  
Test oil : ISO 4113

Combination No. : 0400074088T8

Injection pump  
Pump designation : PES4M55C320RS175  
EP type number :

Governor  
Governor design. : RSV400...2000MOC353  
: -8  
Governor no. :

Cust. part No. : T 8

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM601 (2,3L)  
Power KW : 58.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder  
assembly : 1688901111

Opening pressure  
bar : 148.5  
Tolerance bar : + 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 2.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 21.00  
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

### BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 15.5  
Tolerance : + 0.20  
Check  
tolerance °NW : + 0.30

### BASIC SETTING

Rated speed rpm : 1980

Rack travel in mm : 11.95  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 1.5

Spred

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

2nd speed rpm : 400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 7.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Sored  
Tolerance  
cm<sup>3</sup>/1000 strokes : 1.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + 0.35

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1980

Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 1.5

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

##### RATED SPEED

control lever  
position degree : 95.0

rack travel mm : 1.00  
Tolerance mm : + 0.70

Rated speed rpm : 2250

##### LOW IDLE

control lever  
position degree : 64.0  
tolerance degree : + 4.0

##### Load pick-up

Rated speed rpm : 100

CRT mm min. : > 20.10

rack travel mm : 5.40  
Rated speed rpm : 400

##### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

##### TORQUE CONTROL

Rated speed rpm : 1980  
rack travel mm : 11.95  
Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 13.10  
Tolerance mm : + 0.10

Rated speed rpm : 1250  
rack travel mm : 12.80  
Tolerance mm : + 0.10

##### ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 1500  
rack travel mm : 12.50  
Tolerance mm : + 0.10

##### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 2.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance cm<sup>3</sup>/1000S. : 3.0  
Rated speed rpm : 1250  
Spread  
Del. quantity cm<sup>3</sup>/1000 strokes : 40.3  
Tolerance cm<sup>3</sup>/1000 strokes : + - 0.8  
Check tolerance cm<sup>3</sup>/1000S. : + - 1.8  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance cm<sup>3</sup>/1000S. : 3.0

control lever position degree : 95.0

Adjustment of the control-rod travel sensor

control lever position degree : 95.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 52.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance cm<sup>3</sup>/1000S. : 6.0

---

#### LOW IDLE

Rated speed rpm : 400  
rack travel mm : 5.40  
Tolerance mm : + - 0.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 7.8  
Check tolerance cm<sup>3</sup>/1000S. : + - 2.3  
Spread  
Check tolerance cm<sup>3</sup>/1000S. : 1.5

---

#### SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever position degree : 64.0  
tolerance degree : + - 4.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.09.94  
Test oil : ISO 4113

Combination No. : 0402638807

Injection pump  
Pump designation : PE8P120A120LS7127  
EP type number : 0412628817

Governor  
Governor design. : RQ300/1100PA134-3  
Governor no. : 0421801655

Cust. part No. :

## Customer-spec. information

Customer : SNF  
Motor : WD 815.72/73

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.15  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 8.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 4- 8- 6  
: - 3- 7- 2

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance  
Check  
tolerance °NW : + 0.30  
: + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread

Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 6.60  
 Tolerance mm : + 0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve travel mm : 1.55  
 Tolerance mm : + 0.10  
 Rated speed rpm : 1156  
 guide sleeve travel mm : 6.44  
 Tolerance mm : + 0.10  
 Rated speed rpm : 1100  
 guide sleeve travel mm : 6.00  
 Tolerance mm : + 0.10  
 Rated speed rpm : 427  
 guide sleeve travel mm : 4.88  
 Tolerance mm : + 0.10  
 Rated speed rpm : 510  
 guide sleeve travel mm : 6.00  
 Tolerance mm : + 0.10  
 Rated speed rpm : 1310  
 guide sleeve travel mm : 11.50  
 Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 600  
 Rack travel in mm : 16.00  
 Tolerance mm : + 0.60

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 134.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever position degree : 109.0  
 tolerance degree : + 4.0  
 rack travel mm : 13.30  
 Rated speed rpm : 1153  
 Tolerance 1/min : + 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1245  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1350

##### LOW IDLE

control lever position degree : 79.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 6.60  
 Tolerance mm : + - 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 420  
 Tolerance 1/min : + - 20  
 Rated speed rpm : 200  
 CRT mm min. : > 8.00

#### TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 14.55  
 Tolerance mm : + - 0.15  
 Rated speed rpm : 500  
 rack travel mm : 14.55  
 Tolerance mm : + - 0.15

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1500  
 rack travel mm : 14.55  
 Tolerance mm : + - 0.15

##### MEASUREMENT

Rated speed rpm : 500  
 Pressure hPa : 490  
 rack travel mm : 11.25  
 Tolerance mm : + - 0.10  
 Pressure hPa : 790  
 rack travel mm : 13.25  
 Tolerance mm : + - 0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1500  
 Rated speed rpm : 1100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 214.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 5.0

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 15.0  
 Aneroid pressure  
 hPa : 1500  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 238.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0

#### BREAKAWAY

Rack travel in mm : 13.30  
 Rated speed rpm : 1153  
 Tolerance 1/min : + - 8

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 16.00  
 Tolerance mm : + - 0.50  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 195.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 15.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 19.0

#### LOW IDLE

Rated speed rpm : 300  
 rack travel mm : 6.60  
 Tolerance mm : + - 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.09.94  
Test oil : ISO 4113

Combination No. : 0402638808

Injection pump  
Pump designation : PE8P120A120LS7127  
EP type number : 0412628817

Governor  
Governor design. : RQV250...1100PA785  
: -3  
Governor no. : 0421814004

Cust. part No. :

## Customer-spec. information

Customer : SNF  
Motor : WD 815.72/73

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.15  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 8.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 4- 8- 6  
: - 3- 7- 2

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 250  
 Rack travel in mm : 6.60  
 Tolerance mm : + - 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1220  
 Rack travel in mm : 12.80  
 Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 134.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 107.0  
 tolerance degree : + - 4.0  
 rack travel mm : 13.40  
 Rated speed rpm : 1145  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1265  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1350

LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 250  
 rack travel mm : 6.60  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 150  
 CRT mm min. : > 8.60  
 Rated speed rpm : 385

TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 14.55  
 Tolerance mm : + - 0.15  
 Rated speed rpm : 500  
 rack travel mm : 14.55  
 Tolerance mm : + - 0.15

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
 Pressure hPa : 1500  
 rack travel mm : 14.55  
 Tolerance mm : + - 0.15

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 520  
rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.10  
Pressure hPa : 790  
rack travel mm : 13.25  
Tolerance mm :  $\pm$  0.05

#### START CUT-OUT

Rated speed rpm : < 170  
Check speed 1/min : < 190

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500  
Rated speed rpm : 1100  
Del. quantity cm<sup>3</sup>/1000 strokes : 214.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance cm<sup>3</sup>/1000S. : 15.0

Aneroid pressure hPa : 1500  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 238.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0

#### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 16.00  
Tolerance mm :  $\pm$  0.50  
Del. quantity cm<sup>3</sup>/1000 strokes : 195.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  19.0

#### LOW IDLE

Rated speed rpm : 250  
rack travel mm : 6.60  
Tolerance mm :  $\pm$  0.30  
Del. quantity cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.09.94  
Test oil : ISO 4113

Combination No. : 0403476137

Injection pump  
Pump designation : PES6MW100/720RS1196  
: -1  
EP type number : 0413406219

Governor  
Governor design. : RSV400...1000MW1A333  
Governor no. : 0420085118

Cust. part No. : 927 7706

### Customer-spec. information

Customer : LIEBHERR  
Motor : D 916 T

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance Check  
tolerance °NW : + 0.50  
: + 0.75

### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 10.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

2nd speed rpm : 400

Rack travel in mm : 4.60  
Tolerance mm : + - 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + - 0.35

governor spring  
pre-tension  
click setting x : 5.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure

hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### RATED SPEED

control lever  
position degree : 92.0  
tolerance degree : + - 4.0

rack travel mm : 9.25  
Rated speed rpm : 925  
Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 970  
Tolerance 1/min : + - 10

rack travel mm : 1.00  
Tolerance mm : + - 0.70  
Rated speed rpm : 1020

rack travel mm : 4.00  
Rated speed rpm : 985

#### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 3.60

Testing:

Rated speed rpm : 400  
rack travel mm : 4.60  
Tolerance mm : + - 0.20

Rated speed rpm : 100

CRT mm min. : > 19.00

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 10.25  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 10.30  
Tolerance mm : + - 0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure : -  
hPa  
Rated speed rpm : 500  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

#### BREAKAWAY

Rack travel in mm : 9.25  
Rated speed rpm : 925  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0

---

#### LOW IDLE

Rated speed rpm : 400  
rack travel mm : 4.60  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.09.94  
Test oil : ISO 4113

Combination No. : 0403476137A

Injection pump  
Pump designation : PES6MW100/720RS1196  
: -1  
EP type number : 0413406219

Governor  
Governor design. : RSV400...1000MW1A333  
Governor no. : 0420085118

Cust. part No. : 927 7706

---

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 916 T  
Power KW : 132.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

### REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

---

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

---

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

---

### BASIC SETTING

Rated speed rpm : 900

---

Rack travel in mm : 10.25  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spread Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0  
 2nd speed rpm : 400  
 Rack travel in mm : 4.60  
 Tolerance mm : + 0.20  
 Del. quantity cm<sup>3</sup>/1000 strokes : 18.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
 Spread Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

governor spring pre-tension  
 click setting x : 5.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 118.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spread

Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

##### RATED SPEED

control lever position degree : 92.0  
 tolerance degree : + 4.0  
 rack travel mm : 9.25  
 Rated speed rpm : 925  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 970  
 Tolerance 1/min : + 10  
 rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1020  
 rack travel mm : 4.00  
 Rated speed rpm : 985

##### LOW IDLE

control lever position degree : 76.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400  
 rack travel mm : 3.60

##### Testing:

Rated speed rpm : 400  
 rack travel mm : 4.60  
 Tolerance mm : + 0.20

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 900  
 rack travel mm : 10.25  
 Tolerance mm : + 0.05

Rated speed rpm : 500  
 rack travel mm : 10.85

Tolerance mm : + - 0.10  
Rated speed rpm : 600  
rack travel mm : 10.85  
Tolerance mm : + - 0.10

Check tolerance cm<sup>3</sup>/1000s. : + - 8.0

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 125.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance cm<sup>3</sup>/1000s. : + - 4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000s. : 7.0

Aneroid pressure hPa : -  
Rated speed rpm : 600  
Del. quantity cm<sup>3</sup>/1000 strokes : 129.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance cm<sup>3</sup>/1000s. : + - 4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000s. : 7.0

---

#### BREAKAWAY

Rack travel in mm : 9.25  
Rated speed rpm : 925  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + - 0.75  
Del. quantity cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 5.0

---

#### LOW IDLE

Rated speed rpm : 400  
rack travel mm : 4.60  
Tolerance mm : + - 0.20  
Del. quantity cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000s. : + - 4.5  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance cm<sup>3</sup>/1000s. : 5.5

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.10.94  
Test oil : ISO 4113

Combination No. : 0401846950

Injection pump  
Pump designation : PE6P110A720RS3289  
EP type number : 0411816781

Governor  
Governor design. : RQV200...1100PA555  
: -5  
Governor no. : 0421813943

Cust. part No. : 1333234

### Customer-spec. information

Customer : SCANIA  
Motor : DS11 63A

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1688901104

Opening pressure  
bar : 251.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.35  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance  
Check  
tolerance °NW : + 0.30

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 172.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0  
 2nd speed rpm : 325  
 Rack travel in mm : 6.60  
 Tolerance mm : + - 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 22.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1130  
 Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 172.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### RATED SPEED

control lever  
 position degree : 62.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 116.0  
 tolerance degree : + - 4.0  
 rack travel mm : 11.30  
 Rated speed rpm : 1145  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1280  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1400

#### LOW IDLE

control lever  
 position degree : 69.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 16.0  
 tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 325  
 rack travel mm : 6.60  
 Tolerance mm : + - 0.10

Rated speed rpm : 225

CRT mm min. : > 8.80

Rated speed rpm : 310

#### TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 12.35  
 Tolerance mm : + - 0.05

---

**ANEROID/ALTITUDE  
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.35  
Tolerance mm : + - 0.05

**MEASUREMENT**

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.00  
Tolerance mm : + - 0.20

Rated speed rpm : 500

Pressure hPa : 140  
rack travel mm : 10.80  
Tolerance mm : + - 0.15

Pressure hPa : 200  
rack travel mm : 11.75  
Tolerance mm : + - 0.05

---

**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure  
hPa : -  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 164.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

**BREAKAWAY**

Rack travel in mm : 11.30  
Rated speed rpm : 1145

Tolerance 1/min : + - 5

---

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + - 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 24.0

---

**LOW IDLE**

Rated speed rpm : 325  
rack travel mm : 6.60  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.09.94  
Test oil : ISO 4113

Combination No. : 0402646620

Injection pump  
Pump designation : PE6P120A720RS7188  
EP type number : -10  
: 0412626924

Governor  
Governer design. : RQV300...900PA795  
: -17  
Governer no. : 0421814058

Cust. part No. : 1337550

---

Customer-spec. information  
Customer : SCANIA  
Motor : D 11

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901104

Opening pressure  
bar : 251.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

### REMARKS

Start-of-delivery setting with ROBO diaphragm.

---

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

---

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

---

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

---

### BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm : 13.35  
Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 236.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0  
 2nd speed rpm : 300  
 Rack travel in mm : 4.80  
 Tolerance mm : + - 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 23.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1040

Rack travel in mm : 12.00  
 Tolerance mm : + - 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 236.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### RATED SPEED

control lever  
 position degree : 47.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 105.0  
 tolerance degree : + - 4.0  
 rack travel mm : 12.30  
 Rated speed rpm : 945  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1035  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1150

#### LOW IDLE

control lever  
 position degree : 73.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 15.0  
 tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 300  
 rack travel mm : 4.80  
 Tolerance mm : + - 0.10

Rated speed rpm : 200

CRT mm min. : > 7.50

Rated speed rpm : 345

#### TORQUE CONTROL

Rated speed rpm : 900  
 rack travel mm : 13.35  
 Tolerance mm : + - 0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.35  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 270  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 440  
rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.05

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 222.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

### BREAKAWAY

Rack travel in mm : 12.30  
Rated speed rpm : 945

Tolerance 1/min :  $\pm$  5

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0

---

### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.09.94  
Test oil : ISO 4113

Combination No. : 0402646904

Injection pump  
Pump designation : PE6P120A720RS7126  
: -10  
EP type number : 0412626929

Governor  
Governor design. : RQV300...900PA795  
: -10  
Governor no. : 0421813846

Cust. part No. : 1305081

---

Customer-spec. information  
Customer : SCANIA  
Motor : DS11

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1688901019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

---

### REMARKS

Start-of-delivery setting with ROBO diaphragm.

---

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

---

Phasing : 0-60-120-180-240  
: -300  
Tolerance check  
tolerance °NW : + 0.30

---

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

---

### BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm : 14.15  
Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 235.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 4.50  
 Tolerance mm : + 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 970  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 235.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 50.0  
 tolerance degree : + 4.0  
 control lever  
 position degree : 108.0  
 tolerance degree : + 4.0  
 rack travel mm : 13.10  
 Rated speed rpm : 945  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1045  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1150

##### LOW IDLE

control lever  
 position degree : 77.0  
 tolerance degree : + 4.0  
 control lever  
 position degree : 19.0  
 tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 300  
 rack travel mm : 4.50  
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 10.00

Rated speed rpm : 300  
 rack travel mm : 2.00

##### TORQUE CONTROL

Rated speed rpm : 900  
 rack travel mm : 14.15

Tolerance mm :  $\pm$  0.05

Rated speed rpm : 945  
Tolerance 1/min :  $\pm$  5

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 250  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 510  
rack travel mm : 13.05  
Tolerance mm :  $\pm$  0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 152.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### BREAKAWAY

Rack travel in mm : 13.10

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 300.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 4.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.06.94  
Test oil : ISO 4113

Combination No. : 0402846059

Injection pump  
Pump designation : PE6P120A720RS8026  
EP type number : 0412826027

Governor  
Governor design. : RQV200...950PA1091K  
Governor no. : 0421815984

Cust. part No. : 1355081

---

Customer-spec. information  
Customer : SCANIA  
Motor : DSC1172

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1688901104

Opening pressure  
bar : 251.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

Start-of-delivery setting with ROBO diaphragm.

---

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check tolerance °NW : + 0.75

---

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

---

### BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm : 13.35  
Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 383.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0  
 2nd speed rpm : 250  
 Rack travel in mm : 4.40  
 Tolerance mm : + - 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
 guide sleeve  
 travel mm : 1.26  
 Tolerance mm : + - 0.20  
 Rated speed rpm : 1008  
 guide sleeve  
 travel mm : 9.87  
 Tolerance mm : + - 0.15  
 Rated speed rpm : 800  
 guide sleeve  
 travel mm : 6.59  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 310  
 guide sleeve  
 travel mm : 2.00  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 360

guide sleeve  
 travel mm : 2.45  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 520  
 guide sleeve  
 travel mm : 3.58  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1200  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1060  
 Rack travel in mm : 12.50  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 383.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
 position degree : 65.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 118.0  
 tolerance degree : + - 4.0  
 rack travel mm : 13.50  
 Rated speed rpm : 995  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00

Rated speed rpm : 1075  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1150

#### LOW IDLE

control lever  
 position degree : 71.0  
 tolerance degree : + 4.0

control lever  
 position degree : 17.0  
 tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 250  
 rack travel mm : 4.40  
 Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 5.40

Rated speed rpm : 325  
 rack travel mm : 2.00

#### TORQUE CONTROL

Rated speed rpm : 950  
 rack travel mm : 14.50  
 Tolerance mm : + 0.10

Rated speed rpm : 300  
 rack travel mm : 10.75  
 Tolerance mm : + 0.20

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 950  
 Pressure hPa : 1500  
 rack travel mm : 13.50  
 Tolerance mm : + 0.10

##### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 950  
 rack travel mm : 7.00

Tolerance mm : + 0.20  
 Rated speed rpm : 950  
 Pressure hPa : 520  
 rack travel mm : 7.80  
 Tolerance mm : + 0.20  
 Pressure hPa : 800  
 rack travel mm : 9.85  
 Tolerance mm : + 0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 950  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 384.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 189.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

#### BREAKAWAY

Rack travel in mm : 13.50  
 Rated speed rpm : 995  
 Tolerance 1/min : + 5

#### LOW IDLE

Rated speed rpm : 250  
 rack travel mm : 4.40  
 Tolerance mm : + 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0



## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.09.94  
Test oil : ISO 4113

Combination No. : 0402946012

Injection pump  
Pump designation : PES6P120A320RS8031  
EP type number : 0412926022

Governor  
Governor design. : RQV300...1000PA1181K  
Governor no. : 0421815975

Cust. part No. : CCEP 5145 66-234

### Customer-spec. information

Customer : RVI  
Motor : MIDR 063540 P 41  
Power KW : 300.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413078

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.60  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 11.00  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

: -300  
Tolerance : + 0.30

Check tolerance °NW : + 0.50

### BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav.  
mm : 19.50  
and maximum rack  
travel : 21.00  
Difference ° CS : 2.75  
Tolerance : + 0.75

Time to cyl. no. : 1

### BASIC SETTING

Rated speed rpm : 1000  
 \_\_\_\_\_  
 Rack travel in mm : 13.70  
 Tolerance mm : + 0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 357.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : -7.80  
 Tolerance mm : + 0.20  
 Del. quantity cm<sup>3</sup>/1000 strokes : 35.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 6.0  
 Spred  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.47  
 Tolerance mm : + 0.25

Rated speed rpm : 1082  
 guide sleeve  
 travel mm : 9.30  
 Tolerance mm : + 0.25

Rated speed rpm : 797  
 guide sleeve  
 travel mm : 6.08  
 Tolerance mm : + 0.25

Rated speed rpm : 383  
 guide sleeve  
 travel mm : 2.42  
 Tolerance mm : + 0.25  
 Rated speed rpm : 433  
 guide sleeve  
 travel mm : 2.89  
 Tolerance mm : + 0.25  
 Rated speed rpm : 530  
 guide sleeve  
 travel mm : 3.71  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1350  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1200

Rack travel in mm : 12.00  
 Tolerance mm : + 2.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 357.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 297.0  
 tolerance degree : + 4.0  
 rack travel mm : -1.00  
 Rated speed rpm : 1070  
 Tolerance 1/min : + 5

rack travel mm : -9.60  
Rated speed rpm : 1170  
Tolerance 1/min : + 15

rack travel mm : -13.20  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

#### LOW IDLE

control lever position degree : 254.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : -7.80  
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm max. : < -6.50

Rated speed rpm : 360

#### TORQUE CONTROL

Rated speed rpm : 1000

Rated speed rpm : 600  
rack travel mm : -0.65  
Tolerance mm : + 0.10

Rated speed rpm : 850  
rack travel mm : -0.35  
Tolerance mm : + 0.20

Rated speed rpm : 350  
rack travel mm : -1.70  
Tolerance mm : + 0.25

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1000  
Pressure hPa : 1000  
Tolerance mm : + 0.10

#### MEASUREMENT

Pressure hPa : -

Rated speed rpm : 500  
rack travel mm : -4.50  
Tolerance mm : + 0.20

Rated speed rpm : 1000

Pressure hPa : 240  
rack travel mm : -3.70  
Tolerance mm : + 0.20

Pressure hPa : 560  
rack travel mm : -1.90  
Tolerance mm : + 0.05

#### START CUT-OUT

Rated speed rpm : < 210  
Check speed 1/min : < 230

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
Rated speed rpm : 600  
Del. quantity cm<sup>3</sup>/1000 strokes : 382.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 238.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min : + 5

#### STARTING FUEL DELIVERY

Del. quantity cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : -7.80  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 29.09.94  
Test oil : ISO 4113

Combination No. : 0402946013

Injection pump  
Pump designation : PES6P120A320RS8028  
EP type number : 0412926021

Governor  
Governor design. : RQV275...1250PA1189K  
Governor no. : 0421815974

Cust. part No. : CCEP 5146 66-220

## Customer-spec. information

Customer : RVI  
Motor : MIDR 06.02.26Y41  
Power KW : 184.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413078

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.95  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 11.00  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 14.40  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 277.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 275  
 Rack travel in mm : -7.90  
 Tolerance mm : + - 0.20  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 36.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 1.10  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1332  
 guide sleeve  
 travel mm : 10.07  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 912  
 guide sleeve  
 travel mm : 6.79  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 412  
 guide sleeve  
 travel mm : 2.53  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 462

guide sleeve  
 travel mm : 3.16  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 550  
 guide sleeve  
 travel mm : 3.97  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1630  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1420  
 Rack travel in mm : 13.50  
 Tolerance mm : + - 1.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
 Aneroid pressure  
 hPa : 1600  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 277.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 299.0  
 tolerance degree : + - 4.0  
 rack travel mm : -1.00  
 Rated speed rpm : 1320  
 Tolerance 1/min : + - 5  
 rack travel mm : -10.40  
 Rated speed rpm : 1465  
 Tolerance 1/min : + - 15  
 rack travel mm : -13.90

Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1600

#### LOW IDLE

control lever position degree : 254.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : -7.90  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm max. : < -7.10

Rated speed rpm : 380

#### TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 650  
rack travel mm : -1.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350  
rack travel mm : -2.80  
Tolerance mm :  $\pm$  0.25

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1600  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -4.50  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1250

Pressure hPa : 360  
rack travel mm : -4.00  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 560  
rack travel mm : -2.70  
Tolerance mm :  $\pm$  0.05

#### START CUT-OUT

Rated speed rpm : < 225  
Check speed 1/min : < 245

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1600  
Rated speed rpm : 650  
Del. quantity cm<sup>3</sup>/1000 strokes : 287.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 197.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1320  
Tolerance 1/min :  $\pm$  5

#### STARTING FUEL DELIVERY

Del. quantity cm<sup>3</sup>/1000 strokes : 97.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  14.0

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : -7.90

Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.10.94  
Test oil : ISO 4113

Combination No. : 0400074778

Injection pump  
Pump designation : PES4M60C320RS185  
EP type number : 0410064006

Governor  
Governor design. : RSF375/1900M79  
Governor no. : 0420021280

Cust. part No. :

---

Customer-spec. information  
Customer : MB-PKW  
Motor : OM601 D23 LA  
Power KW : 72.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder  
assembly : 1688901111

Opening pressure  
bar : 148.5  
Tolerance bar : + 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 2.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 21.00  
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

### BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

°NW after s.o.d. : 17.0  
Tolerance : + 0.20  
Check  
tolerance °NW : + 0.30

### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 59.5

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.7  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 1.8  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.5  
 2nd speed rpm : 375  
 Rack travel in mm : 6.00  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 6.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 1.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### IDLE STAGE

Rack travel in mm : 6.50  
 Tolerance mm : + 0.10

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Ref. pressure  
 ALDA / ADA hPa : 1850  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 59.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.7  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 1.8  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.5

##### RATED SPEED

control lever position degree	:	50.0
rack travel mm	:	8.30
Rated speed rpm	:	2200
rack travel mm	:	0.50
Tolerance mm	:	+ 0.50
Rated speed rpm	:	2600
<hr/>		
SET IDLE CONTROL LEVER POSITION		
Rated speed rpm	:	900
CRT mm max.	:	1.95
<hr/>		
LOW IDLE		
tolerance degree	:	+ 2.0
Setting point w/out bumper spring	:	
Rated speed rpm	:	375
rack travel mm	:	6.00
<hr/>		
SET IDLE AUXILIARY SPRING		
Rated speed rpm	:	500
rack travel mm	:	4.20
Tolerance mm	:	+ 0.10
<hr/>		
Load pick-up		
Rated speed rpm	:	250
CRT mm min.	:	> 11.00
Rated speed rpm	:	900
CRT mm max.	:	1.95
rack travel mm	:	6.00
Rated speed rpm	:	375
<hr/>		
TORQUE CONTROL		
Rated speed rpm	:	900
rack travel mm	:	13.80
Tolerance mm	:	+ 0.05
Rated speed rpm	:	1500
rack travel mm	:	13.20
Tolerance mm	:	+ 0.10
Rated speed rpm	:	1900
rack travel mm	:	12.60

Tolerance mm : + - 0.10

---

#### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 900  
Ref. pressure ALDA / ADA hPa : 1600  
rack travel mm : -0.30  
Tolerance mm : + - 0.20

##### MEASUREMENT

Rated speed rpm : 900  
Ref. pressure ALDA / ADA hPa : 1100  
rack travel mm : -2.65  
Tolerance mm : + - 0.10

Rated speed rpm : 900  
Ref. pressure ALDA / ADA hPa : 750  
rack travel mm : -4.30  
Tolerance mm : + - 0.20

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure ALDA / ADA hPa : 1850  
Rated speed rpm : 1500  
Del. quantity cm<sup>3</sup>/1000 strokes : 58.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 2.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance cm<sup>3</sup>/1000S. : 3.5

Ref. pressure ALDA / ADA hPa : 1850  
Rated speed rpm : 1900  
Spread  
Del. quantity cm<sup>3</sup>/1000 strokes : 56.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.2  
Check tolerance cm<sup>3</sup>/1000S. : + - 2.2  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance cm<sup>3</sup>/1000S. : 3.5

Ref. pressure ALDA / ADA hPa : 1100  
Rated speed rpm : 900  
Del. quantity cm<sup>3</sup>/1000 strokes : 43.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 0.7  
Check tolerance cm<sup>3</sup>/1000S. : + - 1.8  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance cm<sup>3</sup>/1000S. : 3.5

---

#### HIGH IDLE

Rated speed rpm : 2200  
rack travel mm : 8.30  
Tolerance mm : + - 0.20  
Del. quantity cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.2  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.2  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance cm<sup>3</sup>/1000S. : 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 50.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 8.5

---

#### LOW IDLE

Rated speed rpm : 375  
rack travel mm : 6.00  
Tolerance mm : + - 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 7.8  
Check tolerance  
cm<sup>3</sup>/1000s. : + - 2.3  
Spred  
Check tolerance  
cm<sup>3</sup>/1000s. : 1.5

---

#### CHECKING THE IDLE-SPEED AUXILIARY

degree : > 42.00  
degree : < 39.50

---

#### SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

tolerance degree : + - 2.0

Current A : 1.80

control lever  
position degree : 50.0

Current short-  
duration A : 3.00

#### Starting test

Rated speed rpm : 100

Current A : 1.80

#### Adjustment of the control-rod travel sensor

control lever  
position degree : 50.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.10.94  
Test oil : ISO 4113

Combination No. : 0400074883

Injection pump  
Pump designation : PES4M60C320RS185  
EP type number : 0410064006

Governor  
Governor design. : RSF375/1900M78  
Governor no. : 0420021274

Cust. part No. :

---

Customer-spec. information  
Customer : MB-PKW  
Motor : OM601 D23 LA  
Power KW : 72.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder  
assembly : 1688901111

Opening pressure  
bar : 148.5  
Tolerance bar : + 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

---

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 2.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 21.00  
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

---

### BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

°NW after s.o.d. : 17.0  
Tolerance : + 0.20  
Check  
tolerance °NW : + 0.30

---

### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 59.5

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.7  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 1.8  
 \_\_\_\_\_  
 Spread  
 \_\_\_\_\_  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.5  
 \_\_\_\_\_  
 2nd speed rpm : 375  
 \_\_\_\_\_  
 Rack travel in mm : 6.00  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 6.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 1.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### IDLE STAGE

Rack travel in mm : 6.50  
 Tolerance mm : + 0.10

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Ref. pressure  
 ALDA / ADA hPa : 1850  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 59.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.7  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 1.8  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.5

##### RATED SPEED

control lever  
 position degree : 50.0  
 \_\_\_\_\_  
 rack travel mm : 8.30  
 Rated speed rpm : 2200  
 \_\_\_\_\_  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 2600

##### SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900  
 \_\_\_\_\_  
 CRT mm max. : 1.95

##### LOW IDLE

tolerance degree : + 2.0  
 \_\_\_\_\_  
 Setting point w/out bumper spring  
 Rated speed rpm : 375  
 rack travel mm : 6.00

##### SET IDLE AUXILIARY SPRING

Rated speed rpm : 500  
 rack travel mm : 4.20  
 Tolerance mm : + 0.10

##### Load pick-up

Rated speed rpm : 250  
 \_\_\_\_\_  
 CRT mm min. : > 11.00  
 \_\_\_\_\_  
 Rate<sub>u</sub> speed rpm : 900  
 \_\_\_\_\_  
 CRT mm max. : 1.95  
 \_\_\_\_\_  
 rack travel mm : 6.00  
 Rated speed rpm : 375

##### TORQUE CONTROL

Rated speed rpm : 900  
 rack travel mm : 13.80  
 Tolerance mm : + 0.05

Rated speed rpm : 1500  
 rack travel mm : 13.20  
 Tolerance mm : + 0.10

Rated speed rpm : 1900  
 rack travel mm : 12.60

Tolerance mm : + - 0.10

Check tolerance  
cm<sup>3</sup>/1000S. : + - 1.8

---

#### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 900  
Ref. pressure  
ALDA / ADA hPa : 1600  
rack travel mm : -0.30  
Tolerance mm : + - 0.20

##### MEASUREMENT

Rated speed rpm : 900  
Ref. pressure  
ALDA / ADA hPa : 1100  
rack travel mm : -2.65  
Tolerance mm : + - 0.10

Rated speed rpm : 900  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -4.30  
Tolerance mm : + - 0.20

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 58.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 2.0

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 1900  
Spread  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 56.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.2  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 2.2

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 0.7

---

#### HIGH IDLE

Rated speed rpm : 2200  
rack travel mm : 8.30  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.2  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.2

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.5

---

#### LOW IDLE

Rated speed rpm : 375  
rack travel mm : 6.00  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 7.8  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 2.3  
Spread  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

#### CHECKING THE IDLE-SPEED AUXILIARY

degree : > 42.00  
degree : < 39.50

---

#### SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever  
position degree : VWL  
Rated speed rpm : 425

Rack travel in mm : 8.40  
Tolerance mm : + - 0.80

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

tolerance degree : + - 2.0

control lever  
position degree : 50.0

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.89  
Test oil : ISO 4113

Combination No. : 0400074909

Injection pump  
Pump designation : PES4M55C320RS107-2  
EP type number : 0410054962

Governor  
Governor design. : RSF375/1900M18-4  
Governor no. : 0420021096

Cust. part No. :

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM616 (2.4 L)  
Power KW : 47.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

M10

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Prestroke mm : 2.25  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 20.00  
Firing order : 1- 3- 4- 2

---

Phasing : 0-90-180-270  
Check tolerance °NW : + 1.00

---

## BASIC SETTING

Rated speed rpm : 1000

---

Rack travel in mm : 13.05  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

---

Check tolerance  
cm<sup>3</sup>/1000s. : + 1.5

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

---

Check tolerance  
cm<sup>3</sup>/1000s. : 3.0

---

Rack travel in mm : 5.00  
Tolerance mm : + 0.10

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1000
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	38.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 0.5
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ 1.5
Spred		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	2.5
Check tolerance		
cm <sup>3</sup> /1000S.	:	3.0

RATED SPEED

control lever		
position degree	:	50.0
rack travel mm	:	7.80
Rated speed rpm	:	2100
rack travel mm	:	0.50
Tolerance mm	:	+ 0.50
Rated speed rpm	:	2350

SET IDLE CONTROL LEVER POSITION

Rated speed rpm	:	1000
CRT mm max.	:	< 1.50

LOW IDLE

control lever		
position degree	:	11.0
tolerance degree	:	+ 2.0

Setting point w/out bumper spring		
Rated speed rpm	:	450
rack travel mm	:	5.00

SET IDLE AUXILIARY SPRING

Rated speed rpm	:	375
rack travel mm	:	6.20
Tolerance mm	:	+ 0.10

rack travel mm	:	2.00
Rated speed rpm	:	770
Tolerance 1/min	:	+ 50

Load pick-up

Rated speed rpm	:	250
CRT mm min.	:	> 10.50
Rated speed rpm	:	1000
CRT mm max.	:	< 1.50

TORQUE CONTROL

Rated speed rpm	:	1000
rack travel mm	:	13.05
Tolerance mm	:	+ 0.05
Rated speed rpm	:	1400
rack travel mm	:	12.50
Tolerance mm	:	+ 0.10
Rated speed rpm	:	1900
rack travel mm	:	12.10
Tolerance mm	:	+ 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm	:	1400
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	38.5
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ 2.0
Spred		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	2.5
Check tolerance		
cm <sup>3</sup> /1000S.	:	3.0
Rated speed rpm	:	1900
Spred		
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	39.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ 2.0
Spred		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	2.5

Check tolerance  
cm<sup>3</sup>/1000s. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 6.0

---

#### SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever  
position degree : 11.0  
tolerance degree : + 2.0

control lever  
position degree : 50.0

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.89  
Test oil : ISO 4113

Combination No. : 0400074923

Injection pump  
Pump designation : PES4M50C320RS103-1  
EP type number : 0410054025

Governor  
Governor design. : RSF375/2200M19-1  
Governor no. : 0420021065

Cust. part No. :

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM615 -2.0 L-  
Power KW : 46.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413012

Inlet press. bar : 1.0

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 1.75  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 20.00  
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Check tolerance °NW : + 1.00

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 1.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Rack travel in mm : 4.90  
Tolerance mm : + 0.10

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Del. quantity cm<sup>3</sup>/1000 strokes : 31.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 0.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 1.5  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance cm<sup>3</sup>/1000S. : 3.0

RATED SPEED

control lever position degree : 50.0  
rack travel mm : 7.30  
Rated speed rpm : 2400  
  
rack travel mm : 0.50  
Tolerance mm : + - 0.50  
Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000  
CRT mm max. : < 1.50

LOW IDLE

control lever position degree : 14.0  
tolerance degree : + - 2.0

Setting point w/out bumper spring  
Rated speed rpm : 450  
rack travel mm : 4.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 375  
rack travel mm : 6.30  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 790  
Tolerance 1/min : + - 50

Load pick-up

Rated speed rpm : 250  
CRT mm min. : > 11.00  
Rated speed rpm : 1000  
CRT mm max. : < 1.50

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.05  
Tolerance mm : + - 0.05  
  
Rated speed rpm : 1800  
rack travel mm : 11.50  
Tolerance mm : + - 0.10  
  
Rated speed rpm : 2100  
rack travel mm : 11.00  
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1800  
Del. quantity cm<sup>3</sup>/1000 strokes : 33.3  
Tolerance cm<sup>3</sup>/1000 strokes : + - 0.8  
Check tolerance cm<sup>3</sup>/1000S. : + - 1.8  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance cm<sup>3</sup>/1000S. : 3.0  
  
Rated speed rpm : 2100  
Spread  
Del. quantity cm<sup>3</sup>/1000 strokes : 32.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 2.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000s. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 6.0

---

#### SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever  
position degree : 14.0  
tolerance degree : + - 2.0

control lever  
position degree : 50.0

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.10.94  
Test oil : ISO 4113

Combination No. : 0400864088

Injection pump  
Pump designation : PES4A85D410/3RS2799  
EP type number : 0410884944

Governor  
Governor design. : RSV325...1250A2C2253  
: -2L  
Governor no. : 0420232556

Cust. part No. :

---

Customer-spec. information  
Customer : KHD  
Motor : BF4L913  
Power KW : 78.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

Test electrically-released starting  
quantity (EES) with 12 volts

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Prestroke mm : 2.50  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.75  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 84.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.5

Spread

Tolerance cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0  
 2nd speed rpm : 325  
 Rack travel in mm : 6.00  
 Tolerance mm : + - 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 15.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.50  
 Tolerance mm : + - 0.20  
 governor spring pre-tension click setting x : 2.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 84.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 0.5  
 Check tolerance cm<sup>3</sup>/1000S. : + - 2.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

#### RATED SPEED

control lever position degree : 95.0  
 tolerance degree : + - 4.0  
 rack travel mm : 10.70  
 Rated speed rpm : 1295  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1335  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1480

#### LOW IDLE

control lever position degree : 64.0  
 tolerance degree : + - 4.0  
 Testing:  
 Rated speed rpm : 325  
 rack travel mm : 6.00  
 Tolerance mm : + - 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 370  
 Tolerance 1/min : + - 30  
 Rated speed rpm : 100  
 CRT mm min. : > 19.50

#### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

#### TORQUE CONTROL

Rated speed rpm : 1250  
 rack travel mm : 11.75  
 Tolerance mm : + - 0.05  
 Rated speed rpm : 500  
 rack travel mm : 12.15  
 Tolerance mm : + - 0.05  
 Rated speed rpm : 800  
 rack travel mm : 12.00

Tolerance mm : + - 0.10

Rated speed rpm : 1295  
Tolerance 1/min : + - 5

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 12.15  
Tolerance mm : + - 0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.85  
Tolerance mm : + - 0.05

Rated speed rpm : 500

Pressure hPa : 230  
rack travel mm : 11.50  
Tolerance mm : + - 0.10

Pressure hPa : 300  
rack travel mm : 11.85  
Tolerance mm : + - 0.05

#### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : 520  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 81.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

##### Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 59.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

#### BREAKAWAY

Rack travel in mm : 10.70

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.80  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 7.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 10.0

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 6.00  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0400866117

Injection pump  
Pump designation : PES6A80D410/3RS2527  
EP type number : 0410886059

Governor  
Governor design. : RSV325...900A1C602  
: -5L  
Governor no. : 0420232605

Cust. part No. :

## Customer-spec. information

Customer : KHD  
Motor : F6L913  
Power KW : 65.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 1.95  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

## BASIC SETTING

Del. quantity  
cm³/1000 strokes : 51.0

Tolerance  
cm³/1000 strokes : + 0.5

Check tolerance  
cm³/1000s. : + 2.0

Spread  
Tolerance  
cm³/1000 strokes : 2.5

Check tolerance  
cm³/1000s. : 4.0

2nd speed rpm : 395

Rack travel in mm : 9.40

Tolerance mm : + - 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
 Check tolerance cm<sup>3</sup>/1000S. : + - 3.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : + - 0.20

governor spring pre-tension  
 click setting x : 3.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 880  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 51.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 0.5  
 Check tolerance cm<sup>3</sup>/1000S. : + - 2.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance cm<sup>3</sup>/1000S. : 4.0

##### RATED SPEED

control lever position degree : + - 96.0  
 tolerance degree : + - 4.0  
 rack travel mm : 11.20

Rated speed rpm : 925  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 960  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1110

##### LOW IDLE

control lever position degree : 73.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 325  
 rack travel mm : 9.40  
 Tolerance mm : + - 0.10

rack travel mm : 2.00  
 Rated speed rpm : 395  
 Tolerance 1/min : + - 30

Rated speed rpm : 100  
 CRT mm min. : > 19.50

##### SET IDLE AUXILIARY SPRING

Rated speed rpm : 100

##### BREAKAWAY

Rack travel in mm : 11.20  
 Rated speed rpm : 925  
 Tolerance 1/min : + - 5

##### LOW IDLE

Rated speed rpm : 395  
 rack travel mm : 9.40  
 Tolerance mm : + - 0.10

Det. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0400866125

Injection pump  
Pump designation : PES6A85D410/3RS2761  
EP type number : 0410886895

Governor  
Governor design. : RSV325...1150A8C674  
: -1L  
Governor no. : 0420232518

Cust. part No. :

## Customer-spec. information

Customer : KHD  
Motor : BF6L913  
Power KW : 112.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 2.55  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.15  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 85.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance cm<sup>3</sup>/1000S. : 7.0  
 2nd speed rpm : 325  
 Rack travel in mm : 7.60  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.50  
 Tolerance mm : + 0.20  
 governor spring pre-tension click setting x : 4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure hPa : 700  
 Del. quantity cm<sup>3</sup>/1000 strokes : 85.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 0.5  
 Check tolerance cm<sup>3</sup>/1000S. : + 2.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

##### RATED SPEED

M23

control lever position degree : 103.0  
 tolerance degree : + 4.0  
 rack travel mm : 11.10  
 Rated speed rpm : 1195  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1240  
 Tolerance 1/min : + 15  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1410  
 rack travel mm : 4.00  
 Rated speed rpm : 1255

##### LOW IDLE

control lever position degree : 67.0  
 tolerance degree : + 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 325  
 rack travel mm : 7.10  
 Testing:  
 Rated speed rpm : 325  
 rack travel mm : 7.60  
 Tolerance mm : + 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 460  
 Tolerance 1/min : + 30  
 Rated speed rpm : 100  
 CRT mm min. : > 19.50

##### TORQUE CONTROL

Rated speed rpm : 1150  
 rack travel mm : 12.15  
 Tolerance mm : + 0.05  
 Rated speed rpm : 500  
 rack travel mm : 12.65  
 Tolerance mm : + 0.05  
 Rated speed rpm : 855

rack travel mm : 12.50  
Tolerance mm : + - 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 11.55  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : 350  
Rated speed rpm : 500  
rack travel mm : 11.95  
Tolerance mm : + - 0.05

Rated speed rpm : 500

Pressure hPa : 700  
rack travel mm : 12.65  
Tolerance mm : + - 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 700  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 88.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.5

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 65.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.5

---

#### BREAKAWAY

Rack travel in mm : 11.10  
Rated speed rpm : 1195  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.20  
Tolerance mm : + - 0.20  
Del. quantity cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 7.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 10.0

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 7.60  
Tolerance mm : + - 0.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance cm<sup>3</sup>/1000S. : 7.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0400866126

Injection pump  
Pump designation : PES6A85D410/3RS2761  
EP type number : 0410886895

Governor  
Governor design. : RSV325...1150A8C673  
: -2L  
Governor no. : 0420232519

Cust. part No. :

## Customer-spec. information

Customer : KHD  
Motor : BF6L913  
Power KW : 112.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1419922198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0  
x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 2.55  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance  
Check  
tolerance °NW : + 0.50  
: + 0.75

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.15  
Tolerance mm : + 0.05

Del. quantity  
cm3/1000 strokes : 85.0

Tolerance  
cm3/1000 strokes : + 0.5

Check tolerance  
cm3/1000s. : + 2.5

Spread  
Tolerance  
cm3/1000 strokes : 3.0

Check tolerance cm<sup>3</sup>/1000S. : 7.0  
 2nd speed rpm : 325  
 Rack travel in mm : 7.60  
 Tolerance mm : + - 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

---

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.50  
 Tolerance mm : + - 0.20  
 governor spring pre-tension click setting x : 4.00

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

---

Rated speed rpm : 1150  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 85.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 0.5  
 Check tolerance cm<sup>3</sup>/1000S. : + - 2.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

---

#### RATED SPEED

---

control lever position degree : 102.0  
 tolerance degree : + - 4.0  
 rack travel mm : 11.10  
 Rated speed rpm : 1195  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1240  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1410  
 rack travel mm : 4.00  
 Rated speed rpm : 1255

---

#### LOW IDLE

---

control lever position degree : 67.0  
 tolerance degree : + - 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 325  
 rack travel mm : 7.10  
 Testing:  
 Rated speed rpm : 325  
 rack travel mm : 7.60  
 Tolerance mm : + - 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 460  
 Tolerance 1/min : + - 30  
 Rated speed rpm : 100  
 CRT mm min. : > 19.50

---

#### TORQUE CONTROL

---

Rated speed rpm : 1150  
 rack travel mm : 12.15  
 Tolerance mm : + - 0.05  
 Rated speed rpm : 500  
 rack travel mm : 12.65  
 Tolerance mm : + - 0.05  
 Rated speed rpm : 855

rack travel mm : 12.40  
Tolerance mm : + - 0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 88.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

---

#### BREAKAWAY

Rack travel in mm : 11.10  
Rated speed rpm : 1195  
Tolerance 1/min : + - 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.20  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 7.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 10.0

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 7.60  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.10.94  
Test oil : ISO 4113

Combination No. : 0401846545

Injection pump  
Pump designation : PE6P110A320RS494-1  
EP type number : 0411816168

Governor  
Governor design. : RQV250...1200PA1184  
Governor no. : 0421814112

Cust. part No. : 11030926 P0?advanced

## Customer-spec. information

Customer : VME  
Motor : TD71K  
Power KW : 148.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1457413010

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.80  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 117.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0  
 \_\_\_\_\_  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

**(B) SETTING OF INJECTION PUMP WITH GOVERNOR**

---

**GUIDE SLEEVE TRAVEL**

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.12  
 Tolerance mm : + 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 1256  
 guide sleeve  
 travel mm : 8.57  
 Tolerance mm : + 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 905  
 guide sleeve  
 travel mm : 5.37  
 Tolerance mm : + 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 435  
 guide sleeve  
 travel mm : 2.03  
 Tolerance mm : + 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 485  
 guide sleeve  
 travel mm : 2.43  
 Tolerance mm : + 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 590  
 guide sleeve  
 travel mm : 3.11  
 Tolerance mm : + 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 1490  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

---

**GUIDE SLEEVE POSITION**

control lever  
 position degree : - 1  
 Rated speed rpm : 1330  
 \_\_\_\_\_  
 Rack travel in mm : 10.00  
 Tolerance mm : + 1.50

---

**FULL LOAD DELIVERY AT FULL LOAD STOP**

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 1500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 117.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

**RATED SPEED**

control lever  
 position degree : 48.0  
 tolerance degree : + 4.0  
 \_\_\_\_\_  
 control lever  
 position degree : 107.0  
 tolerance degree : + 4.0  
 \_\_\_\_\_  
 rack travel mm : 10.80  
 Rated speed rpm : 1245  
 Tolerance 1/min : + 5  
 \_\_\_\_\_  
 rack travel mm : 4.00  
 Rated speed rpm : 1335  
 Tolerance 1/min : + 15  
 \_\_\_\_\_  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1450

---

**LOW IDLE**

control lever  
 position degree : 72.0  
 tolerance degree : + 4.0  
 \_\_\_\_\_  
 control lever  
 position degree : 13.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm : + - 0.20

Rated speed rpm : 200

CRT mm min. : > 6.50

Rated speed rpm : 360

---

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.80  
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.70  
Tolerance mm : + - 0.20

Rated speed rpm : 500

Pressure hPa : 500  
rack travel mm : 1.80  
Tolerance mm : + - 0.10

Pressure hPa : 210  
rack travel mm : 0.25  
Tolerance mm : + - 0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

BREAKAWAY

NO2

Rack travel in mm : 10.80  
Rated speed rpm : 1245  
Tolerance 1/min : + - 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + - 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 19.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.10.94  
Test oil : ISO 4113

Combination No. : 0402035032

Injection pump  
Pump designation : PES5P120A720/3LS528  
: -1  
EP type number : 0412025023

Governor  
Governor design. : RQV325...1000PA876  
: -10  
Governor no. : 0421813900

Cust. part No. : 51.11103-7348

---

Customer-spec. information  
Customer : MAN  
Motor : D2865LF/LU05  
Power KW : 198.0

---

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 130  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004  
Test Lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

---

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 3.55  
Tolerance mm : + 0.05  
  
test only : + 0.10  
  
Rack travel in mm : 13.50  
Tolerance mm : + 0.50  
  
Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 5

### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.65  
 Tolerance mm :  $\pm$  0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 221.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 325  
 Rack travel in mm : 4.50  
 Tolerance mm :  $\pm$  0.20

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
 guide sleeve travel mm : 0.96  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 1057  
 guide sleeve travel mm : 9.86  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 809  
 guide sleeve travel mm : 6.82  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 380  
 guide sleeve travel mm : 1.82  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 430  
 guide sleeve travel mm : 2.54  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 540

guide sleeve travel mm : 3.64  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 1290  
 guide sleeve travel mm : 13.50  
 Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1080  
 Rack travel in mm : 16.50  
 Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 221.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever position degree : 300.0  
 tolerance degree :  $\pm$  4.0  
 rack travel mm : 10.60  
 Rated speed rpm : 1045  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : 4.00  
 Rated speed rpm : 1115  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : 0.50  
 Tolerance mm :  $\pm$  0.50  
 Rated speed rpm : 1250

##### LOW IDLE

control lever  
position degree : 256.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 325  
rack travel mm : 4.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100

CRT mm min. : > 6.10

Rated speed rpm : 400

#### TORQUE CONTROL

Rated speed rpm : 750  
rack travel mm : 11.65  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 550  
rack travel mm : 11.65  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 11.65  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 390  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 150  
rack travel mm : 9.45  
Tolerance mm :  $\pm$  0.05

#### START CUT-OUT

NOS

Rated speed rpm : < 245  
Check speed 1/min : < 265

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 220.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure hPa : 1000  
Rated speed rpm : 550  
Del. quantity cm<sup>3</sup>/1000 strokes : 213.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  7.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### BREAKAWAY

Rack travel in mm : 10.60  
Rated speed rpm : 1045  
Tolerance 1/min :  $\pm$  5

#### STARTING FUEL DELIVERY

Del. quantity cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

**LOW IDLE**

Rated speed rpm : 325  
rack travel mm : 4.50  
Tolerance mm : +/- 0.20



## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0402046789

Injection pump  
Pump designation : PES6P120A320RS3139  
EP type number : 0412026718

Governor  
Governor design. : RQV275...1000PA728  
: -3  
Governor no. : 0421813657

Cust. part No. : CCEP 5070 -116

## Customer-spec. information

Customer : RVI  
Motor : MIDR 062045 H  
Power KW : 227.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413071

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1688901019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 3.55  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check tolerance °NW : + 0.50

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.15  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

NOT?

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1170

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 119.0  
tolerance degree : + 4.0

rack travel mm : -1.00  
Rated speed rpm : 1075  
Tolerance 1/min : + 5

rack travel mm : -7.15  
Rated speed rpm : 1190  
Tolerance 1/min : + 15

rack travel mm : -10.65  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 275  
rack travel mm : -5.45  
Tolerance mm : + 0.15

Rated speed rpm : 200

CRT mm max. : < -3.80

Rated speed rpm : 370

##### TORQUE CONTROL

Rated speed rpm : 600

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -2.20  
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 160  
rack travel mm : -1.60  
Tolerance mm : + 0.10

Pressure hPa : 280  
rack travel mm : -0.75  
Tolerance mm : + 0.05

##### START CUT-OUT

Rated speed rpm : < 195

Check  
speed 1/min : < 215

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 103.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1075  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.10.94  
Test oil : ISO 4113

Combination No. : 0402646772

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQ300/1050PA1030-21  
Governor no. : 0421801758

Cust. part No. : 0250747102

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 230.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.00  
 Tolerance mm :  $\pm$  0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 5.20  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve travel mm : 1.88  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
 guide sleeve travel mm : 6.37  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
 guide sleeve travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 401

guide sleeve travel mm : 4.23  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 510  
 guide sleeve travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 1280  
 guide sleeve travel mm : 11.50  
 Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
 Rack travel in mm : 20.00  
 Tolerance mm :  $\pm$  0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever position degree : 97.0  
 tolerance degree :  $\pm$  4.0

rack travel mm : 12.00  
 Rated speed rpm : 1098  
 Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
 Rated speed rpm : 1195  
 Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
 Tolerance mm :  $\pm$  0.75  
 Rated speed rpm : 1300

---

### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. : > 7.50

---

### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

---

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 600

rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.10

---

### START CUT-OUT

Rated speed rpm : < 220  
Check speed 1/min : < 240

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
Rated speed rpm : 1050  
Del. quantity cm<sup>3</sup>/1000 strokes : 228.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : 400  
Rated speed rpm : 400  
Del. quantity cm<sup>3</sup>/1000 strokes : 172.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

---

### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0402646799

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0412626871

Governor  
Governor design. : RQ300/950PA1031-5  
Governor no. : 0421801657

Cust. part No. : 0230744402

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

N14

Test lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40  
 Tolerance mm :  $\pm$  0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 248.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 5.90  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

guide sleeve  
 travel mm : 4.72  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 500  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 1170  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm :  $\pm$  0.50

#### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
 Rack travel in mm : 20.00  
 Tolerance mm :  $\pm$  0.80

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
 Aneroid pressure hPa : 1100  
 Del. quantity cm<sup>3</sup>/1000 strokes : 248.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.04  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 1009  
 guide sleeve  
 travel mm : 6.36  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 950  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10  
 Rated speed rpm : 412

#### RATED SPEED

control lever  
 position degree : 96.0  
 tolerance degree :  $\pm$  4.0  
 rack travel mm : 13.40  
 Rated speed rpm : 998  
 Tolerance 1/min :  $\pm$  8  
 rack travel mm : 4.00  
 Rated speed rpm : 1085  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : 0.75  
 Tolerance mm :  $\pm$  0.75  
 Rated speed rpm : 1300

---

### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : + - 4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min : + - 20

Rated speed rpm : 200  
CRT mm min. : > 5.70

---

### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.40  
Tolerance mm : + - 0.05

Rated speed rpm : 950  
rack travel mm : 14.40  
Tolerance mm : + - 0.05

Rated speed rpm : 400  
rack travel mm : 13.60  
Tolerance mm : + - 0.10

---

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 14.40  
Tolerance mm : + - 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.35  
Tolerance mm : + - 0.20

Rated speed rpm : 400  
Pressure hPa : 550

---

rack travel mm : 13.60  
Tolerance mm : + - 0.10  
Pressure hPa : 250  
rack travel mm : 11.45  
Tolerance mm : + - 0.10

---

### START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 998  
Tolerance 1/min : + - 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0402646994

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0412626871

Governor  
Governor design. : RQ300/950PA1032-13  
Governor no. : 0421801747

Cust. part No. : 0230744202

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 248.0  
 \_\_\_\_\_  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 \_\_\_\_\_  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 \_\_\_\_\_  
 2nd speed rpm : 300  
 \_\_\_\_\_  
 Rack travel in mm : 5.90  
 Tolerance mm : + - 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.16  
 Tolerance mm : + - 0.10  
 \_\_\_\_\_  
 Rated speed rpm : 1009  
 guide sleeve  
 travel mm : 6.52  
 Tolerance mm : + - 0.10  
 \_\_\_\_\_  
 Rated speed rpm : 950  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + - 0.10  
 \_\_\_\_\_  
 Rated speed rpm : 401  
 guide sleeve  
 travel mm : 4.53  
 Tolerance mm : + - 0.10  
 \_\_\_\_\_  
 Rated speed rpm : 500

guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + - 0.10  
 \_\_\_\_\_  
 Rated speed rpm : 1170  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
 \_\_\_\_\_  
 Rack travel in mm : 20.00  
 Tolerance mm : + - 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
 Aneroid pressure  
 hPa : 1100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 248.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
 position degree : 97.0  
 tolerance degree : + - 4.0  
 \_\_\_\_\_  
 rack travel mm : 13.40  
 Rated speed rpm : 998  
 Tolerance 1/min : + - 8  
 \_\_\_\_\_  
 rack travel mm : 4.00  
 Rated speed rpm : 1080  
 Tolerance 1/min : + - 15  
 \_\_\_\_\_  
 rack travel mm : 0.75  
 Tolerance mm : + - 0.75  
 Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min : + - 20

Rated speed rpm : 200  
CRT mm min. : > 8.30

TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.40  
Tolerance mm : + - 0.05

Rated speed rpm : 950  
rack travel mm : 14.40  
Tolerance mm : + - 0.05

Rated speed rpm : 400  
rack travel mm : 13.60  
Tolerance mm : + - 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 14.40  
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.35  
Tolerance mm : + - 0.20

Rated speed rpm : 400

Pressure hPa : 550  
rack travel mm : 13.60  
Tolerance mm : + - 0.10

Pressure hPa : 250

rack travel mm : 11.45  
Tolerance mm : + - 0.10

START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 998  
Tolerance 1/min : + - 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm : + - 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0402646997

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0412626871

Governor  
Governor design. : RQV300...950PA1033  
: -5  
Governor no. : 0421814008

Cust. part No. : 0230744302

### Customer-spec. information

Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

### TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

### BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

### BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40  
Tolerance mm : + 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 248.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 5.90  
 Tolerance mm : + - 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1075

Rack travel in mm : 13.00  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
 Aneroid pressure  
 hPa : 1100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 248.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever	
position degree	: 120.0
tolerance degree	: + - 4.0
rack travel mm	: 13.40
Rated speed rpm	: 995
Tolerance 1/min	: + - 5
rack travel mm	: 4.00
Rated speed rpm	: 1085
Tolerance 1/min	: + - 15
rack travel mm	: 0.70
Tolerance mm	: + - 0.70
Rated speed rpm	: 1200

##### LOW IDLE

control lever	
position degree	: 84.0
tolerance degree	: + - 4.0

##### Testing:

Rated speed rpm	: 300
rack travel mm	: 5.90
Tolerance mm	: + - 0.10
rack travel mm	: 2.00
Rated speed rpm	: 440
Tolerance 1/min	: + - 30
Rated speed rpm	: 200
CRT mm min.	: > 8.10
Rated speed rpm	: 325

##### TORQUE CONTROL

Rated speed rpm	: 550
rack travel mm	: 14.40
Tolerance mm	: + - 0.05
Rated speed rpm	: 950
rack travel mm	: 14.40
Tolerance mm	: + - 0.05

Rated speed rpm : 400  
 rack travel mm : 13.60  
 Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
 Pressure hPa : 1100  
 rack travel mm : 14.40  
 Tolerance mm : + - 0.05

##### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 400  
 rack travel mm : 10.35  
 Tolerance mm : + - 0.20

Rated speed rpm : 400

Pressure hPa : 550  
 rack travel mm : 13.60  
 Tolerance mm : + - 0.10

Pressure hPa : 250  
 rack travel mm : 11.45  
 Tolerance mm : + - 0.10

##### START CUT-OUT

Rated speed rpm : < 240  
 Check speed 1/min : < 260

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1100  
 Rated speed rpm : 950  
 Del. quantity cm<sup>3</sup>/1000 strokes : 240.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 5.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : 550  
 Rated speed rpm : 400  
 Del. quantity cm<sup>3</sup>/1000 strokes : 208.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.5

Aneroid pressure hPa : -  
 Rated speed rpm : 500  
 Del. quantity cm<sup>3</sup>/1000 strokes : 136.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

##### BREAKAWAY

Rack travel in mm : 13.40  
 Rated speed rpm : 995  
 Tolerance 1/min : + - 5

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity cm<sup>3</sup>/1000 strokes : 265.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 10.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 14.0

##### LOW IDLE

Rated speed rpm : 300  
 rack travel mm : 5.90  
 Tolerance mm : + - 0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
 Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

